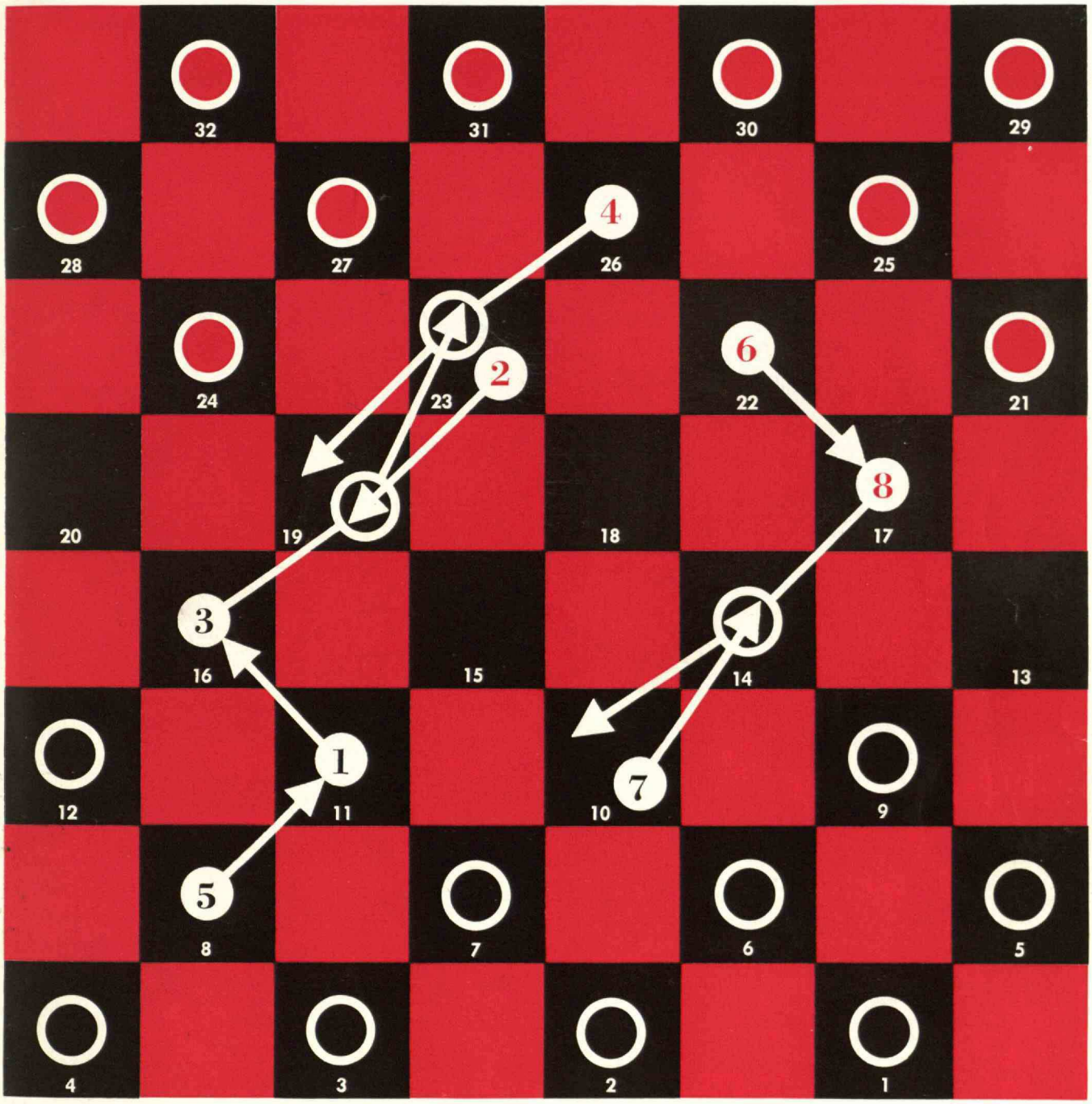
Technology Review



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Athletics at M.I.T., page 30

NOVEMBER 1959

technology
review
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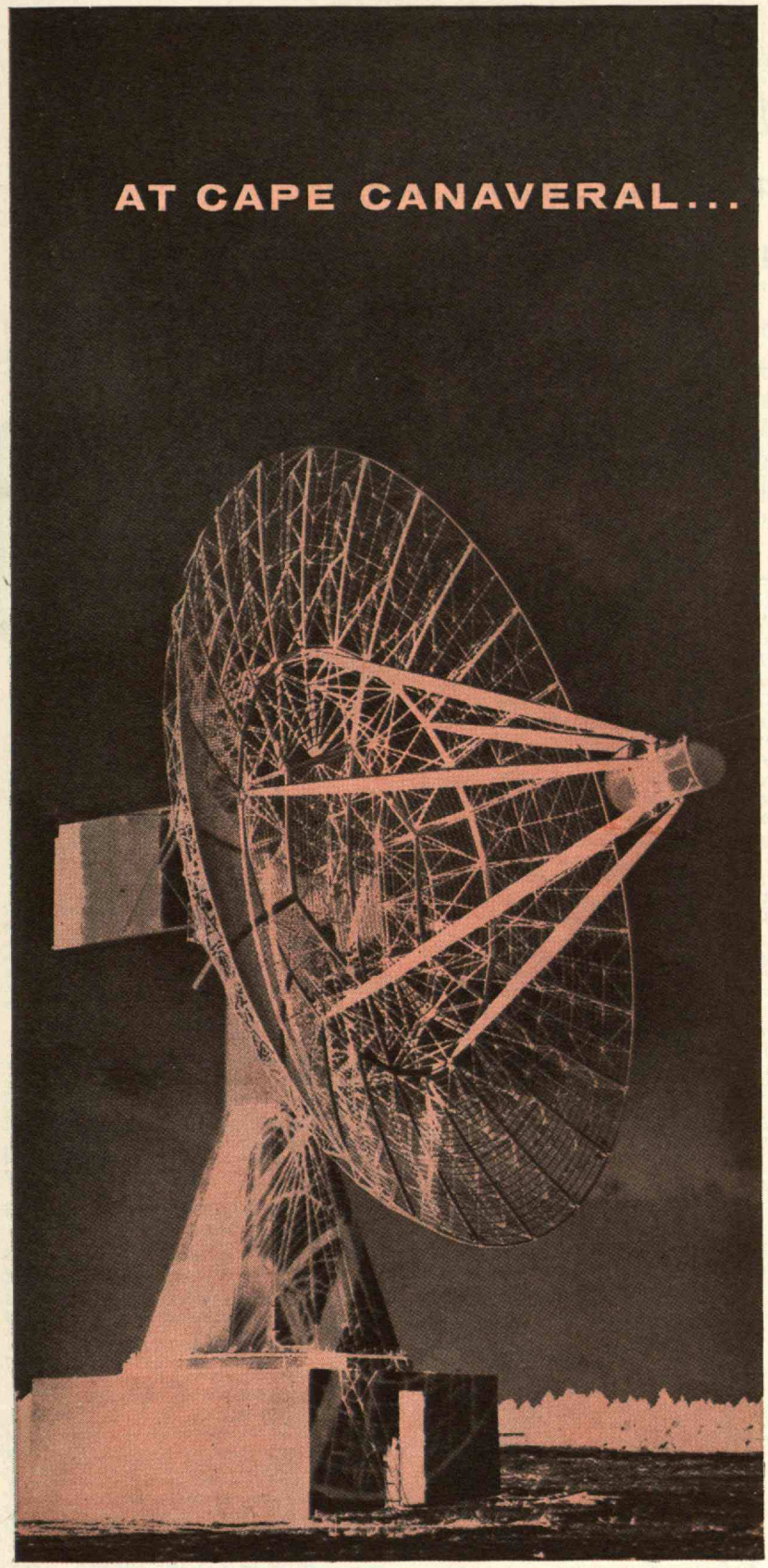
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Important news about the first books to come out of the Physical Science Study Committee

THE SCIENCE STUDY SERIES

During the past three years the Physical Science Study Committee, a group formed at M.I.T., has been working on a program of fundamental importance: to reshape the teaching of physics in secondary schools in the United States.

One vital part of this work has been the commissioning of distinguished scientists to write books which will explain the essence and satisfactions of their work to searching minds of all ages. The first five Science Study Series books, in soft covers and designed for wide distribution and sale at popular prices, are now being published by Doubleday Anchor Books.

During the coming year, at least fifteen of these cogent, readable, illustrated books will be made available. Ultimately, the Science Study Series will comprise more than seventy paper-back volumes. They will range over the key topics of modern physics and geophysics. They will highlight the relationships between the physical sciences and the life sciences. They will revive the most stirring eras in scientific history and the lives of the great scientists. Although an occasional classic will be included in the Series, most of the titles are being especially written to meet the vast and ever-growing needs of an American public whose future may well depend on its scientific awareness.

In addition to the books listed elsewhere in this advertisement, future volumes are now being prepared by such eminent scientists and authors as I. Bernard Cohen, Rene Dubos, Freeman J. Dyson, Laura Fermi, Donald G. Fink, William A. Fowler, Alan Holden, Bernard Jaffe, Alexander Kolin, Philip Morrison, Robert M. Page, Bruno Rossi, Victor F. Weisskopf, Jerome B. Wiesner, and Robert R. Wilson.

"There just weren't any such books when I was a high school student. How lucky those who want to learn about science will be to have them. These books are written by men who know first-hand what is important and what isn't, what is known and what still is not understood, what can be validly explained in simple terms and what can't. And, through the facts and explanations glows a true and real background of science and scientists which no non-participant could provide . . ."—JOHN R. PIERCE, Director of Research, Communications Principles, Bell Telephone Laboratories.

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Forthcoming titles available early in 1960 include:

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The Science Study Series is available wherever Anchor Books are sold, and is distributed to high school students and teachers by Wesleyan University Press, Columbus, Ohio.

For further information, please write to

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Technology Review

Reg. U.S. Pat. Off.

Volume 62, Number 1 *Edited at the Massachusetts Institute of Technology* *November, 1959*

Feedback

On Solar Sailing

FROM T. C. TSU, 2-44:

In the May, 1959, issue of The Technology Review, Professor Sutton stated that "solar sailing is applicable only in the general direction away from the sun." This statement is misleading and does not do justice to the solar sail.

Professor Sutton's statement is correct only if the sail surface is black and nonreflecting. If the surface is reflecting, then the sail could be so oriented that the force acting on it would have a component either in the direction of motion of the sailing ship or opposed to it. In the former case the force would increase the energy of the ship, causing it to move away from the sun. In the latter case the force would decrease the energy of the ship, causing it to move toward the sun. The latter case is analogous to that of an artificial earth satellite falling back to earth when its energy is depleted sufficiently.

For further details and quantitative relations, please refer to the writer's paper on "Interplanetary Travel by Solar Sail" in the June, 1959, issue of the *ARS Journal*, page 422.

Research Laboratories
Westinghouse Electric Corporation
Pittsburgh 35, Pa.

FROM G. P. SUTTON:

Photons coming from the sun always go in a general direction away from the sun. The forces that can be obtained on a solar sail are therefore always exerted in a direction generally away from the sun. It is correct that by inclining the surface of the sail it is possible to obtain components in other directions but the net total force will never be in a direction toward the sun. The sentence on solar sailing in the article in the May issue of The Review should be interpreted to mean that forces from solar sails can only be obtained in a direction generally away from the sun (plus or minus approximately 70 degrees).

If there is a lot of time available and if you apply these forces at the proper time during a space trajectory, it is possible to alter the trajectory so that the vehicle unit could eventually come closer to the sun.

I appreciate Mr. Tsu's comments.

Advanced Research Projects Agency
Washington 25, D.C.

This Month

The Cover

The numbers on the checkerboard show the system used to designate squares, and trace opening moves in a game played against an IBM 704 computer. The method of playing checkers with a computer is explained in the article on page 42.

Individuals Noteworthy 4

Appointments, deaths, promotions, honors, and other news of M.I.T. people.

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David Flett du Pont 26

His bequest of $1,000,000 made the Institute's newest building possible. It gives the university adequate athletic facilities for the first time. His mother, Dr. Killian, President Stratton, and Richard E. Kaplan, spoke at dedication ceremonies.

The Du Pont Building 28

This new hub of athletics was designed for participants rather than for spectators of athletic events. It connects three older buildings, has a new kind of foundation, and will facilitate the use of the Institute's playing fields as well as indoor gymnasiums.

The Role of Athletics 30

Richard L. Balch, Director of Athletics, explains the objectives and accomplishments of the Athletic Department in a university polarized around science and engineering.

The Athletic Coaches' Review 33

A series of short reports on the last season by coaches of the many different sports in which undergraduates at M.I.T. now participate.

Recollections of a Scientist 35

Extracts from a new book, *Magnets*, by Francis Bitter, Professor of Physics and Associate Dean of the M.I.T. School of Science, in which he recalls incidents from his childhood and schooling.

As the World Sees Us 39

Three pages of photographs which are being distributed overseas by the U.S.I.A. to depict the life of an undergraduate at the Institute.

Machine Learning 42

A. L. Samuel, '25, reports progress in teaching a computer to play better and better checkers, and explains the techniques employed, which may be applicable to real-life problems.

Alumni Officers Confer 46

A report on conferences in Chicago and Cambridge at which President Stratton spoke and eight bronze beaver citations were awarded.

Individuals Noteworthy



Floe Is Vice-president

CARL F. FLOE, '35, (above) Administrative Vice Chancellor since 1956, has become Vice-president, Research Administration, for M.I.T. Dr. Floe now has general jurisdiction over the Division of Sponsored Research. He works closely both with Paul V. Cusick, Comptroller, in determining and supervising administrative policies of sponsored research, and also with the Deans of the several Schools to make certain the sponsored research contributes importantly to the educational aims of the Institute.

Dr. Floe has been a member of the Faculty since 1935. In addition to his teaching duties as Professor of Metallurgy, he has held various administrative posts, including that of Assistant Provost.

B. E. Proctor: 1901-1959

THE Head of the Department of Food Technology at M.I.T., Professor Bernard E. Proctor, '23, died in his office in the Dorrance Building on September 24. He had served the Institute since 1925, had pioneered in many kinds of research including most recently the sterilization of food by radiation, and had given much time to public service as a consultant on food problems.

Professor Proctor was born in Malden, Mass., on May 5, 1901. He was salutatorian of his class in the Malden High School, and received both his bachelor's and doctor's degrees from M.I.T. For three years he was an instructor in biochemistry at Boston University School of Medicine. He then joined the M.I.T. staff as an instructor in biology and public health, and became professor of food technology in 1944, director of the Samuel Cate Prescott Laboratories in 1945, and head of the department in 1952.

During World War II, Professor Proctor was expert consultant on foods to the Secretary of War and director of Subsistence and Packaging Research and Development for the Office of Quartermaster General. He also served on a number of National Research Council committees and as a consultant to the U. S. Public Health Service. He had been president of the Institute of Food Technologists and chairman of the Food and Nutrition Section of the American Public Health Association, and was a member of the U. S. delegation to the United Nations Conference on Peaceful Uses of Atomic Energy in 1955. The Appert Medal, highest honor in the field of food technology, was given to him.

Professor Proctor made his home at 100 Memorial Drive, Cambridge. He is survived by his wife, the former Miriam Patten of Andover, Mass.

A. L. Townsend: 1892-1959

LAST August 17, Arthur L. Townsend, '13, died after 40 years' service as a member of the Department of Mechanical Engineering at M.I.T. He was vice-president of the Alumni Association in 1937-1939, and since 1944 had been the director of the Lowell Institute School.

Born in Boston in 1892, Professor Townsend came to M.I.T. from the Boston English High School. When graduated, he joined the Globe Indemnity Company as engineering inspector and soon became New England inspector and chief engineer for the Massachusetts Bonding and Insurance Company. He returned to the Institute as an instructor in 1919, became assistant professor in 1929, and associate professor in 1937. His teaching was in machine design, applied mechanics, and patent relations. He also served for many years as undergraduate and alumni placement officer for the Mechanical Engineering Department.

Professor Townsend was a former chairman of the mechanical engineering division of the American Society for Engineering Education, and received that society's $500 James H. McGraw Award in 1957 for his work as Director of the Lowell Institute School.

W. R. Maclaurin: 1907-1959

W. RUPERT MACLAURIN, Professor of Economics at M.I.T., who was largely responsible for the establishment of his Department's Industrial Relations Section, died on August 17. He was the son of Richard C. Maclaurin, the sixth President of the Institute, and had been on the Faculty since 1936.

Professor Maclaurin was born in New Zealand in 1907. After finishing his course in Harvard College in 1929, he attended the Graduate School of Business Administration and received his M.B.A. in 1932 and the D.C.S. in 1936. He was at Trinity College, Cambridge, England, for a year as a Fiske Scholar in Economics from Harvard, and in Australia for a year as Sheldon Traveling Fellow in Economics. He became an assistant professor at M.I.T. in 1936, associate professor in 1940, and professor in 1942.

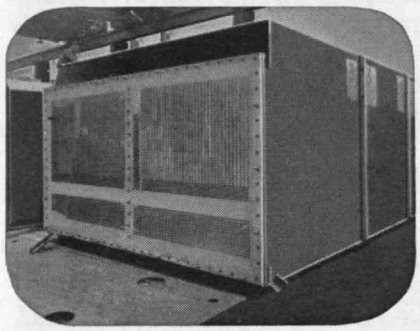
He was the author of *Economic Planning in Australia, The Movement of Factory Workers* (in collaboration with Professor Charles A. Myers), and *Invention and Innovation in the Radio Industry*. He helped to strengthen the Department of Economics and Social Science at M.I.T., and was the first director of its Industrial Relations Section.

Survivors include his wife, Elfriede Carter Maclaurin, and four children, Katharine, Robert, Joan, and Nancy. His brother, R. Colin Maclaurin, died last May 4.

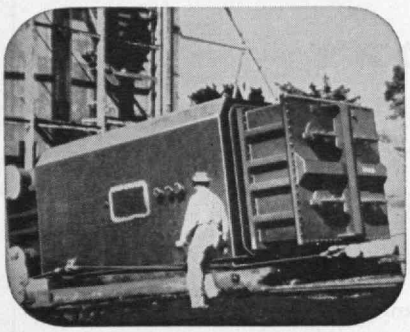
(Continued on page 6)

and auxiliary equipment

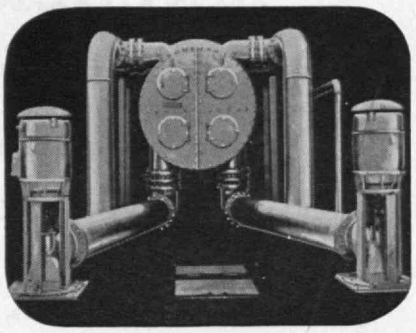
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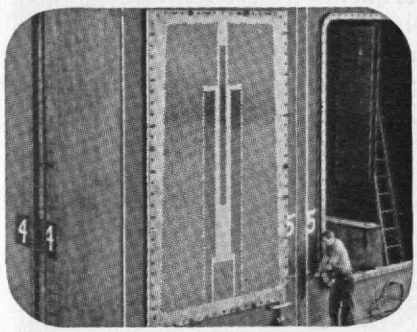


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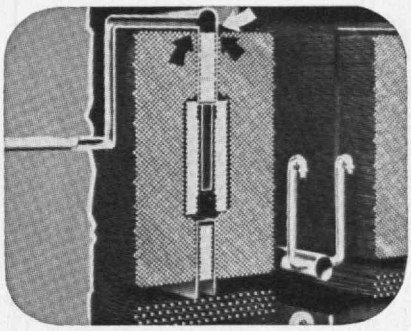


But Wheeler Doesn't limit itself to rectangular design. A round cross section worked out better here, for example, at the first planned gas-steam turbine station ever designed and built in United States.

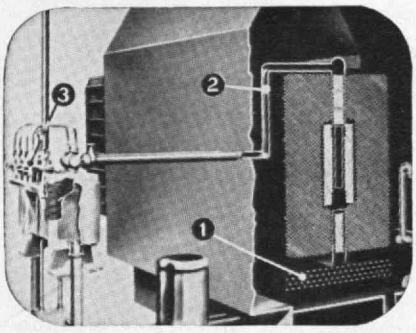
improves power generating efficiencies...



Triple Lane tube layout, another design feature, provides 3 pathways for steam travel, utilizes maximum cooling surface and produces higher condenser vacuums for power generating stations.

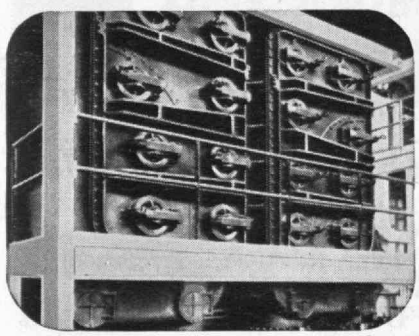


Location of air-vapor takeoff speeds steam travel and allows steam to penetrate to the peripheries of all tubes. It thus improves condenser efficiencies and overall power station operation as well.

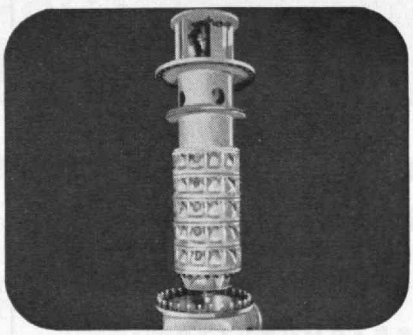


Deaeration of condensate not to exceed 0.01 cc. oxygen/liter is available with special Wheeler designs. Note the Deaerating Bars (1), the Air-Vapor Suction Line (2), and Tubejet® Ejectors (3).

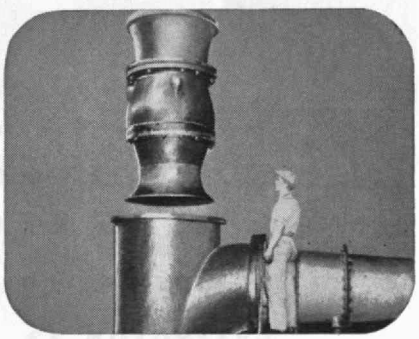
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Individuals Noteworthy

(Continued from page 4)

Appointed to the Faculty

RECENTLY appointed associate professors on the M.I.T. Faculty are:

Warren G. Bennis, '53, in the School of Industrial Management, who received his doctorate at M.I.T. in 1955 and has since taught at Boston and Harvard Universities.

Lincoln P. Bloomfield, in the Department of Economics and Social Science, who has served as special assistant to the Assistant Secretary of State for International Organization Affairs and director of the United Nations Project at the M.I.T. Center for International Studies.

William F. Schreiber, in the Department of Electrical Engineering, who received his B.S. and M.S. degrees from Columbia University and Ph.D. from Harvard, and since 1953 has been a research physicist for the Technicolor Corporation.

Assistant professors recently appointed and the departments in which they will teach are:

Ali S. Argon, '53, Mechanical Engineering.

Pierre J. Brosens, '55, Mechanical Engineering.

Alfred R. Cooper, Jr., Metallurgy.

Paul H. Cootner, '53, School of Industrial Management.

Robert G. Dean, Civil Engineering.

Robert Evans, Jr., '54, Economics and Social Science.

James W. Graham, '52, Electrical Engineering.

Alan L. McWhorter, '55, Electrical Engineering.

Ronald Melzack, Economics and Social Science.

John R. Myer, '52, School of Architecture and Planning.

Gordon C. Oates, Aeronautics and Astronautics.

Ronald E. Rosensweig, Chemical Engineering.

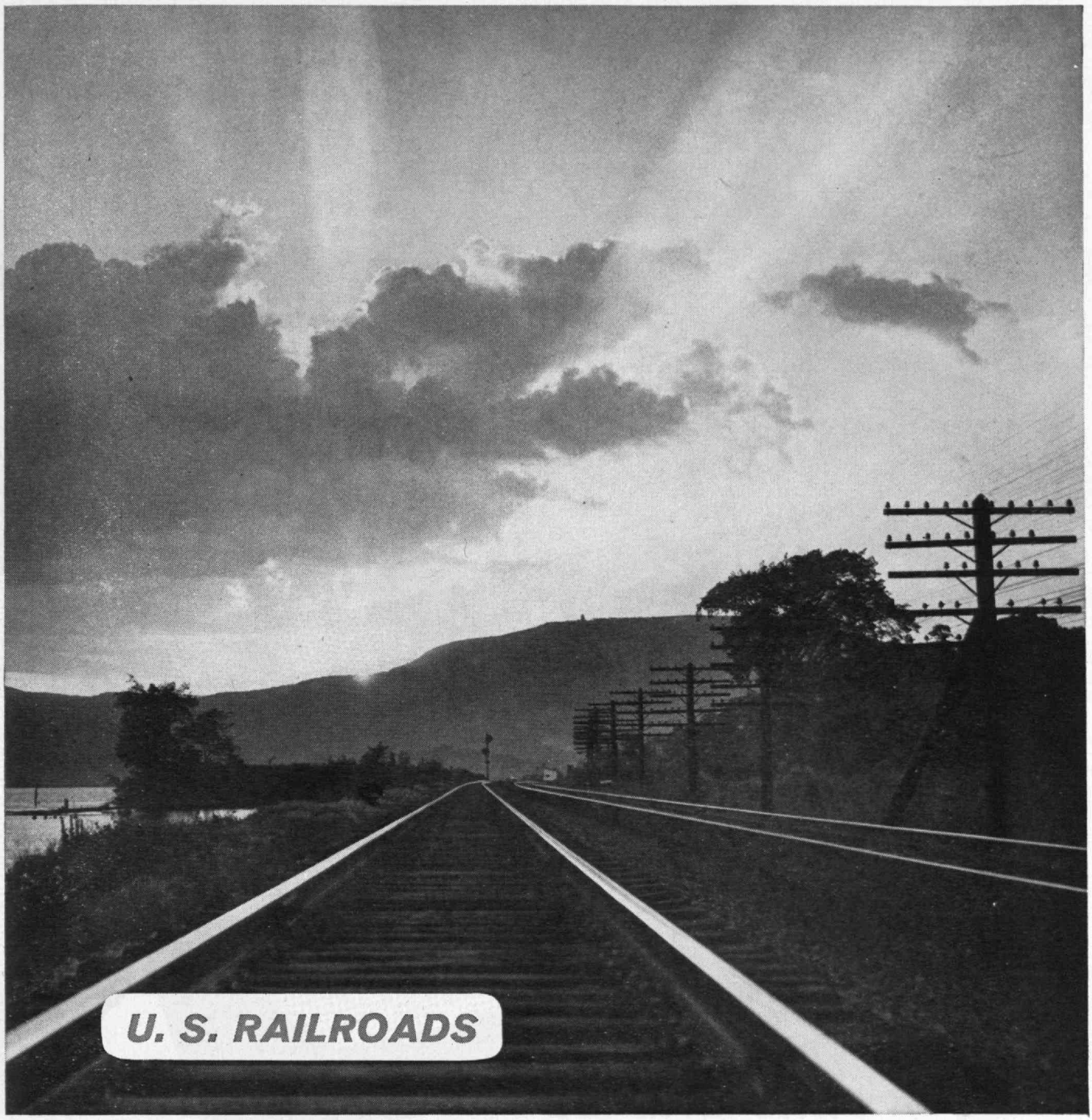
Abner E. Shimony, Humanities.

Yehuda Stavsky, Civil Engineering.

Egons Tons, '54, Civil Engineering.

Michael A. Wallach, Economics and Social Science.

(Continued on page 10)



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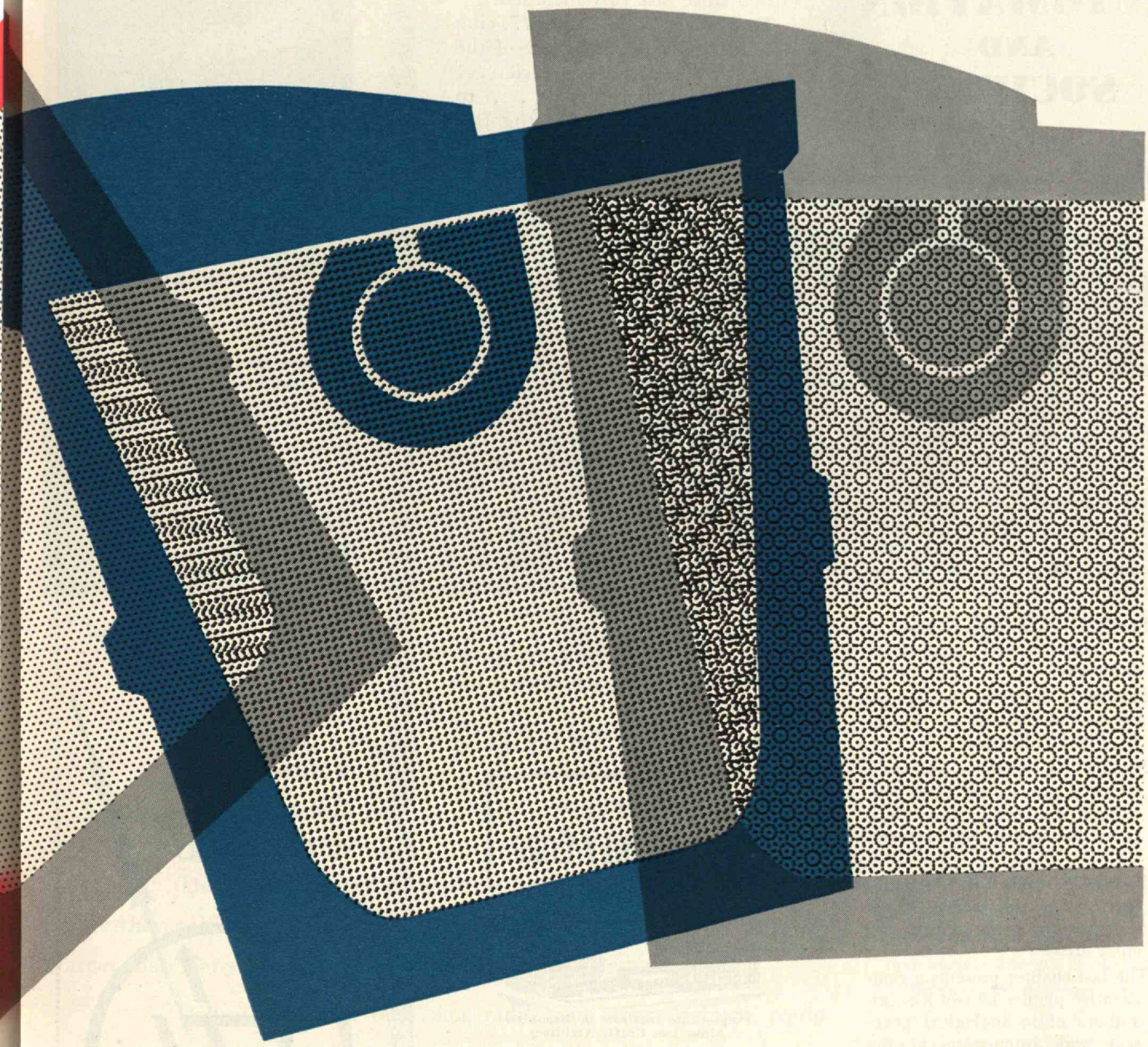
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Individuals Noteworthy

(Continued from page 6)

Honors to Alumni

SPECIAL awards to Alumni reported since last July included:

To *Francis V. du Pont, '17,* citation as Delaware's Engineer of the Year, by the Delaware Society of Professional Engineers . . . to *George C. Manning, '20,* the Distinguished Service Medal, by the Minister of Navy of Brazil . . . to *Major General Alfred B. Quinton, Jr., '21,* an honorary doctorate of laws, by Washburn University;

To *Harold E. Edgerton, '27,* the George W. Harris Award, by Professional Photographers of America, Inc. . . . to *David R. Tashjian, '34,* an honorary doctorate of science, by Western Michigan University . . . to *John H. Hollomon, '40,* the grade of fellow, by the Academy of Arts and Sciences;

To *James B. Weaver, 2d, '44,* the Award of Merit for 1959, by the American Association of Cost Engineers . . . to *Arthur E. Francis, '48,* an honorary doctorate of engineering, by Stevens Institute of Technology . . . to *Jack H. Westbrook, '49,* the Richard L. Templin Award, by the American Society for Testing Materials.

(Continued on page 62)

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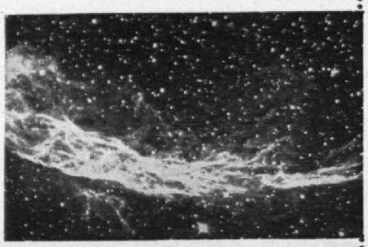


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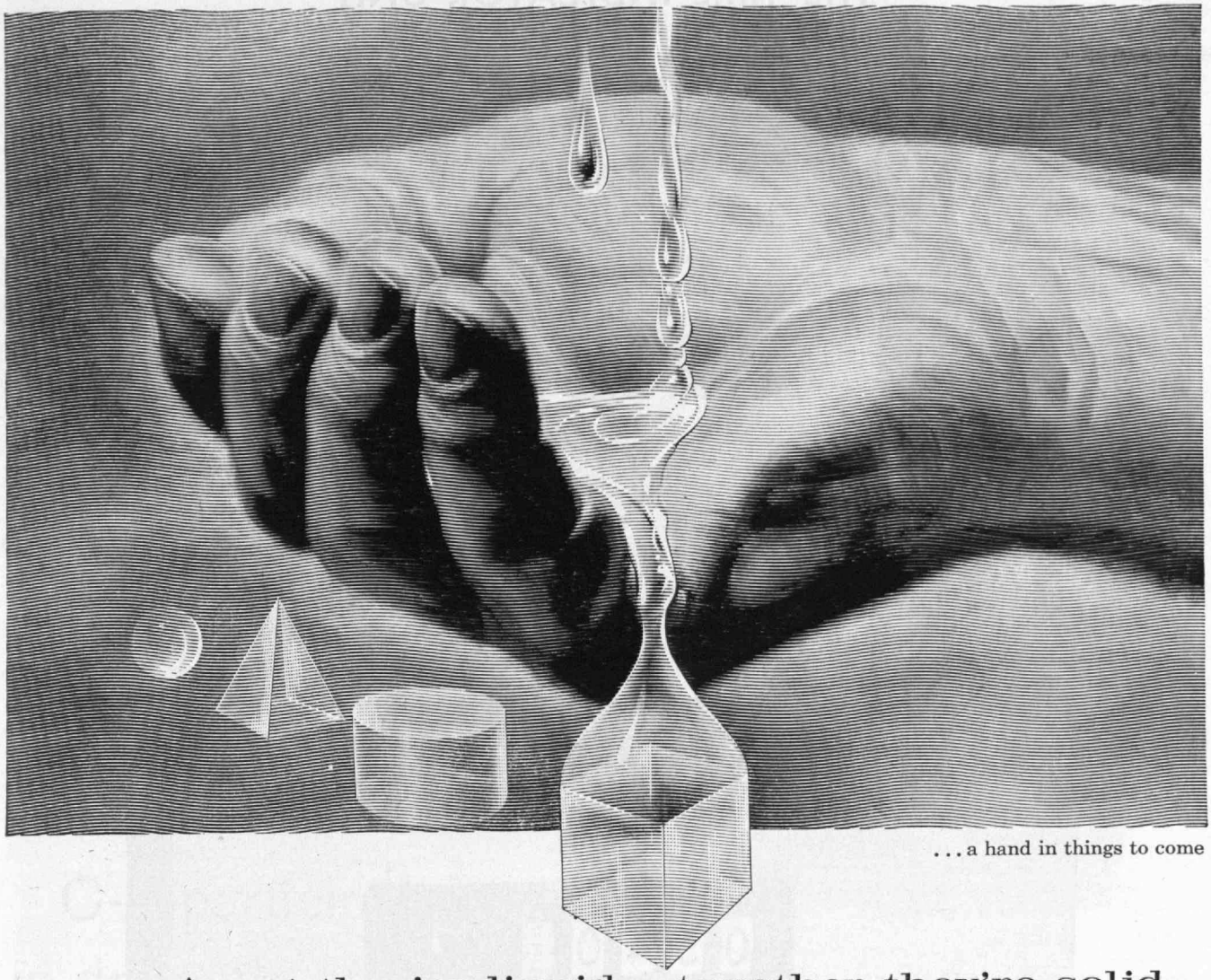
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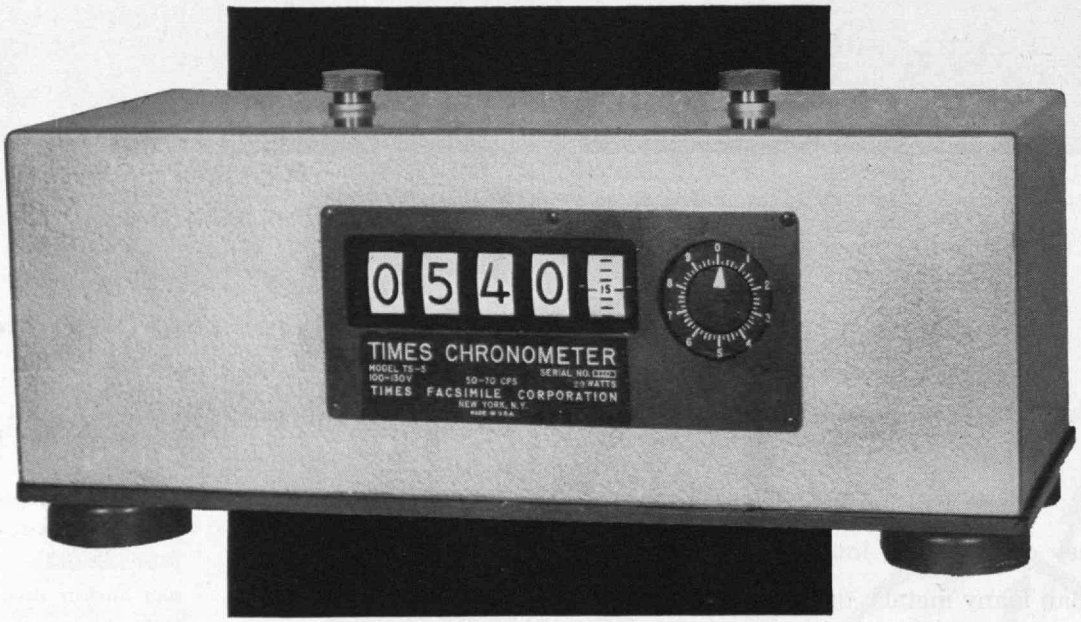
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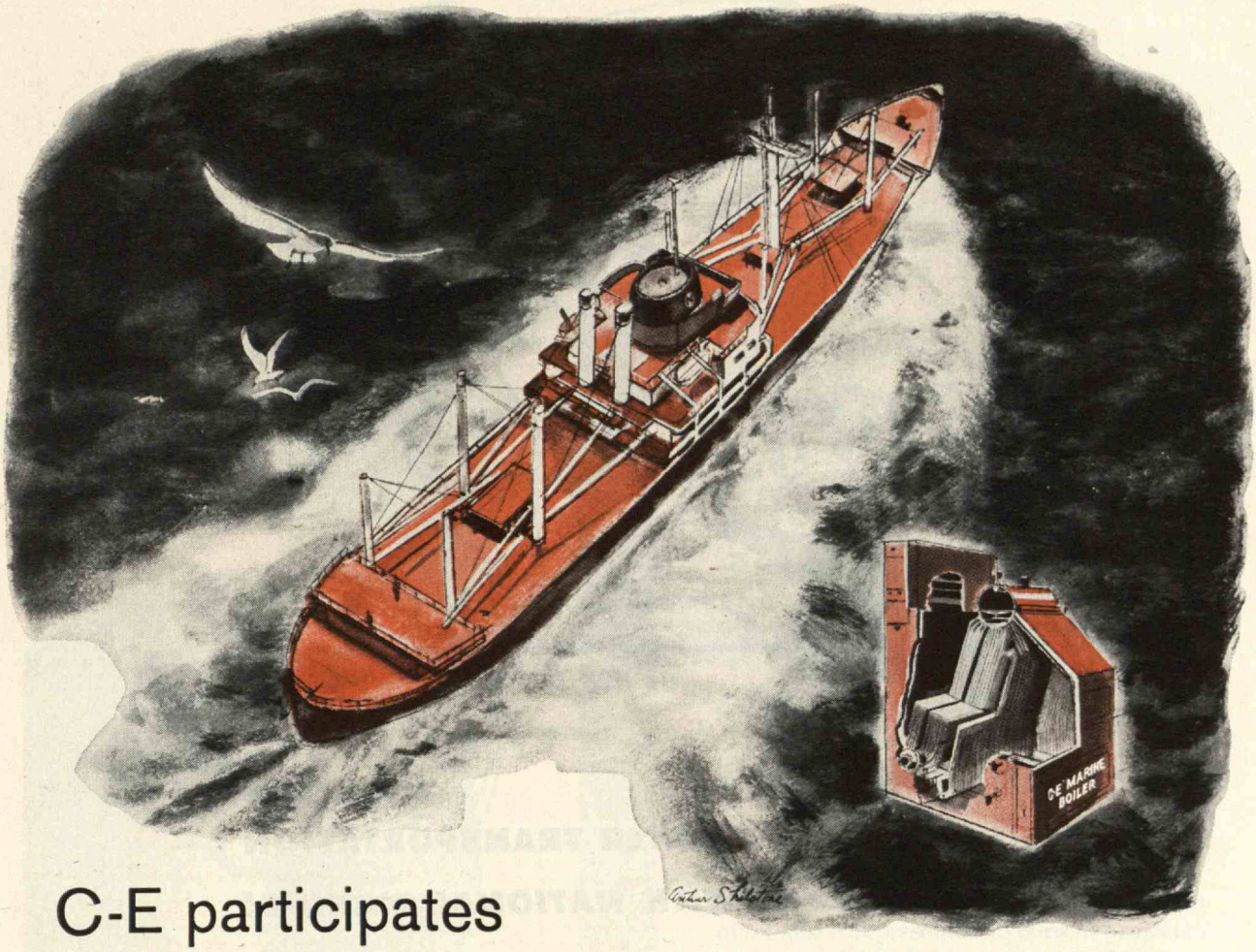
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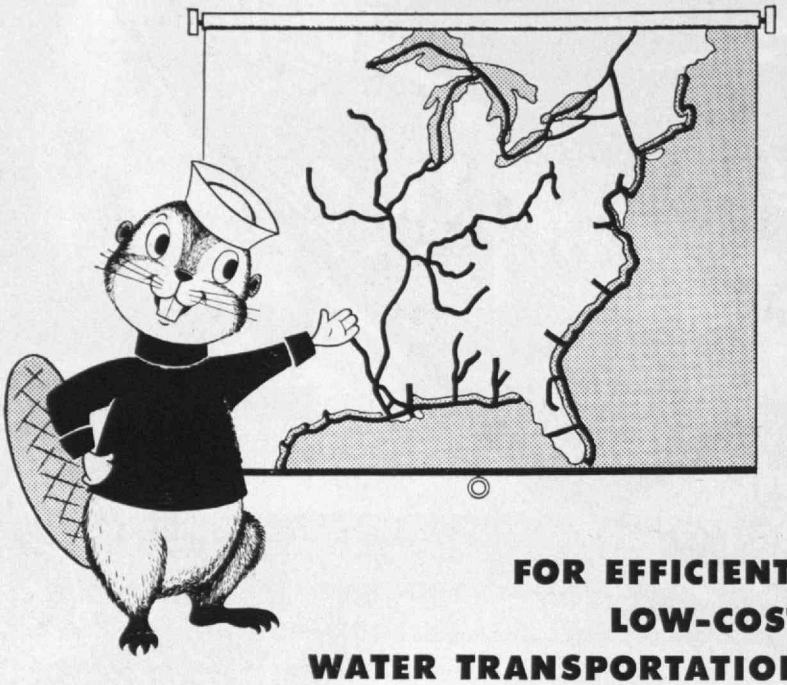
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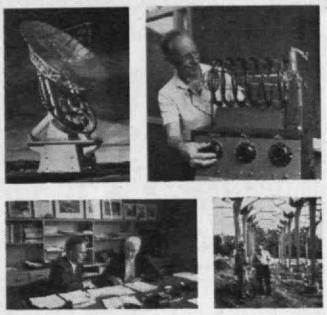
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Trend Of Affairs



President Foresees More Interdisciplinary Centers

IN HIS annual report as President of M.I.T. last month, Julius A. Stratton, '23, warned that in the future the Institute and comparable institutions "may be compelled to break with conventions of the past" in order "to teach difficult, basic subjects to larger groups of students."

A rather free-and-easy epoch in American history has ended, in Dr. Stratton's opinion, and one has arrived in which we must rely more on the quality of our goods and services than on their bulk. The Institute, he believes, can more effectively serve the national interest by improving the quality of the education that it offers than by yielding to the pressure to admit more students.

Bold and creative thinking is needed about both the substance and the methods of instruction, the President argues, because three major forces "are working to make obsolete large segments of the traditional curricula and to outmode many of the methods of instruction." These are: (1) the stupendous accumulation of new knowledge and principles flowing from advances in every field of science and engineering; (2) the increasing importance of a thorough command of modern physics, chemistry, and mathematics; and (3) the rapid dissolution of the traditional boundaries between professional fields which has required that the foundations of a sound professional education constantly be broadened.

"Within a decade," Dr. Stratton notes, "we have seen the advent of a multitude of new fields, effectively non-existent at the outset of the second World War and now of crucial importance to both science and industry.

"No educational institution can remain aloof from all these developments and keep pace with the leaders. But each new venture into a new area brings with it new faculty, new laboratories, and new students. The influence is felt first at the graduate level, but rapidly penetrates to the domain of the undergraduate, bringing new material into the curricula and affecting many aspects of instruction. There is no greater popular misapprehension about the nature of science than that it is built upon a fixed and permanent structure."

To illustrate the pressures, Dr. Stratton cites the increasing enrollment for mathematics work at M.I.T., and the difficulty of maintaining the quality of instruction which ensues. "We should re-examine with an open mind," he believes, "the relative merits of the lecture, recitation, tutorial, and seminar methods, and we should be progressive in the use of every modern technique for the effective presentation of subject matter in classroom and laboratory."

He foresees development of more interdisciplinary groupings for teaching and research similar to the Research Laboratory of Electronics, the Laboratory for Nuclear Science and the Center for Internationl Studies, and notes that "the most comprehensive of these plans encompasses the field of materials.

"It is a field," the report continues, "in which M.I.T. occupies a unique position. In no other academic institution is there so large and so strong a group in solid state science and materials engineering. Nearly 100 faculty members are active in the field. In all, over 500 people drawn from nine different departments, including graduate students, are participating in this work. Our annual budget for research in materials is now in excess of $4,000,000. The strength of M.I.T.'s program arises not merely from its size but from its distinction and from the wide span of its interests — ranging from the most theoretical studies to work of immediate engineering significance. Our plan is to draw these diverse efforts into a large and integrated laboratory which will facilitate co-operation between the scientific and engineering departments, both in research and in the education of students."

In such centers, Dr. Stratton believes, "we are beginning to see something of the future organization of a modern scientific university . . . Initially, these laboratories were conceived principally as centers of graduate and postdoctoral research. It is now quite apparent that because of their size, the availability of equipment, and the character of their financial support, they also afford to M.I.T. our most challenging opportunity to introduce students to the problems and spirit of research in their undergraduate years."

In 1958-1959, the report concludes, the Institute's academic expenses were $23,125,000, which was about 10.6 per cent more than in the preceding year. Sponsored research represented an expenditure of $59,627,000, an increase of nearly 10 per cent. The Institute's investments had a book value of $97,865,000, and a market value of $155,777,000 as of June 30, 1959.

M.I.T. Seeks Basic Knowledge About Very, Very Hot Stuff

THE National Science Foundation further fortified Cambridge's position on the scientific frontiers this fall by granting $500,000 to M.I.T. and $300,000 to Harvard University for the study of ionized gases.

Oceans of such plasmas lay in the atmosphere, affect communication over long distances, and must be penetrated when ballistic missiles and space travelers return to earth. Plasmas also account for the radiation from stars, the aurora borealis, and even the neon lights on Main Street. There is hope now of controlling reactions in which naked atomic nuclei are fused together, and thus making fabulous amounts of energy available; efforts to do this, however, have been handicapped by men's meager knowledge of the behavior of plasmas in magnetic fields. More knowledge also is needed to design space-propulsion systems.

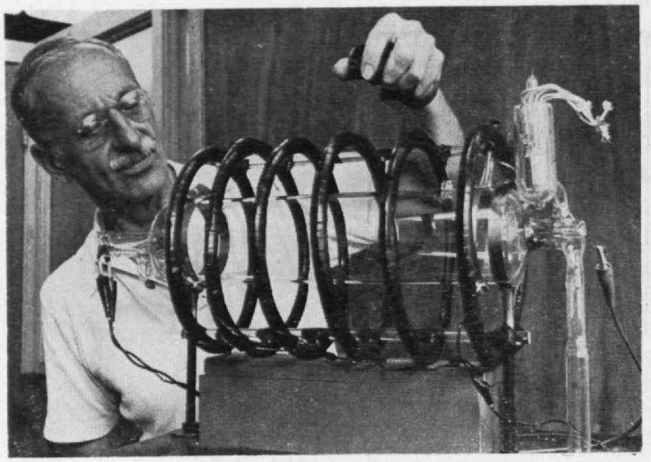
Plasmas have been studied at M.I.T. since World War II; they were employed in devices on which work was done in the Radiation Laboratory to switch radar equipment quickly from transmitting to receiving apparatus. Interest in electrical plasmas has risen rapidly ever since. Plasmas similar to those in the upper atmosphere have been produced in laboratory devices. Magnetic bottles to hold plasmas have been built. As more has been learned about these extremely hot gases, and done with them, uses for them in a tremendous variety of human activities and ambitions have been envisioned.

"It is," says William P. Allis, '23, Professor of Physics, "as if people had lived all their lives in the mountains and then had come down to the edge of the oceans. Before they could use sea water or navigate through it, they would have to learn some things that would be perfectly obvious to anyone who had lived by the ocean. We are dealing with an unknown sea of gas and we have a great deal to learn."

Both the United States and Russia have sunk vast sums into construction of big devices in which it was hoped thermonuclear reactions might be confined and utilized for peaceful purposes. These have increased our awareness of the problem's complexities without solving it. No such gigantic experimental devices are contemplated in Cambridge until more fundamental knowledge has been acquired.

The need for a larger inventory of basic knowledge has been long appreciated at M.I.T. A $250,000 research program (part of the larger effort known as Project Sherwood) for the Atomic Energy Commission has been under way in the Research Laboratory of Electronics for about three years. Several other research contracts are also related to the study of plasmas. These include a $100,000 Joint Service contract for work in electronics, a $100,000 Wright Aeronautical Center contract for research in energy conversion, and a $25,000 Cambridge Air Force Research Center contract for the study of high-energy shock waves. Research of this kind will be considerably extended with the National Science Foundation grant.

At M.I.T. it will be called the Plasma Dynamics Program and headed by Professor Allis. On the committee in charge of it with him are Professor Jerome B. Wiesner, Director of the Research Laboratory of Electronics; Professor Ascher H. Shapiro, '38, and Associate Professors Sanborn C. Brown, '44, and David J. Rose, '50. Representatives of several departments will work together on this program.



Professor Allis shows how plasma is influenced by a magnet.

Harvard will have a High Temperature Gas Dynamics Project, and its principal investigator will be Howard W. Emmons, Gordon McKay Professor of Mechanical Engineering.

Each school will have its own program, but the staffs will exchange information about their activities. About 100 persons will be employed on the two projects.

Even though combustion has long been used, and lies at the very base of technology, Professor Emmons contends that our understanding of the process is meager, and expects it to be increased by these programs. "The study of mechanical phenomena has led to many mechanical engineering applications, and the study of electrical phenomena has led similarly to enormously important electrical engineering applications in our complex society," he has pointed out. "The proposed work attempts to understand better some of the phenomena wherein both mechanical flow and electrical effects are important. It requires only reasonable optimism to hope for useful results."

Regular readers of The Review will recall the role of ionized gases in the advanced space-propulsion systems which George P. Sutton described in the May issue; the difficulties resulting from ionization of gas when a missile or space ship re-enters the atmosphere have been well ballyhooed in the nation's press. In addition to work pertinent to such matters, and the controlled thermonuclear fusion problem, the M.I.T. program will include research on electrical plasma as a factor in communications. Radio waves now are bounced off the ionosphere in some transmissions, and must go through the ionosphere to reach spacecraft and other planets. Another section of the M.I.T. research will deal with the production of plasma by microwaves, and the microwaves which plasmas emit. Still another will involve study of the plasma that is produced in carbon arcs operated in high vacuums.

At Harvard, simultaneously, answers to questions about sunspots, solar flares, and prominences will be sought, as well as to questions about possible entry into the atmospheres of various planets.

Johnson Succeeds Brooks in Industrial Management School

SINCE the School of Industrial Management was established at M.I.T., its Dean has been E. P. Brooks, '17, who returned to the Institute to head this school, recruit its staff, and develop its program, after a successful career in industry. This summer Dean Brooks asked to be relieved of his administrative responsibilities so that he might devote his full time to special studies of interest to the school, and on November 1 he was succeeded as Dean by Professor Howard W. Johnson, who for the last year has been Associate Dean.

Professor Johnson came to M.I.T. in 1955 to direct the Sloan Fellowship Program for young executives from business and industry. The next year he organized the Program for Senior Executives, which now brings a group of top-level men to the Institute each year. Both of these programs were made possible by the Alfred P. Sloan Foundation, which also was responsible for founding the School of Industrial Management.

Professor Johnson, who is now 37, studied economics at Central College in Chicago, the University of Chicago, and the University of Glasgow, Scotland. He was on the faculty of the University of Chicago for seven years, and was formerly assistant to the vice-president of personnel administration for General Mills, and a member of the staff of Robert N. McMurry & Company, management consultants, in Chicago. He served in the Army during World War II and at its end was deputy civil affairs representative for the city of Montpelier, France.

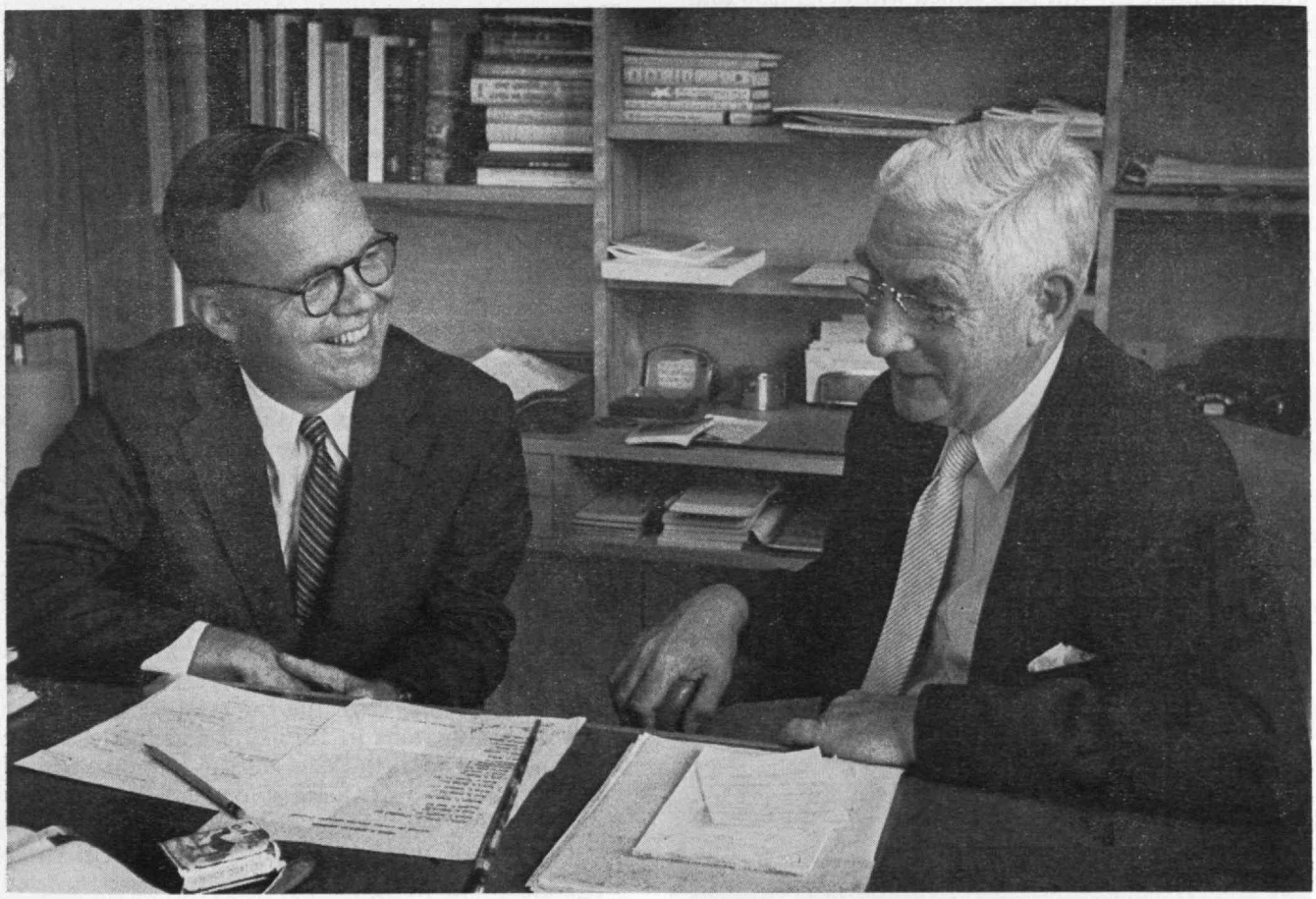
Dean Brooks has been a term member of the M.I.T. Corporation, vice-president of Sears, Roebuck and Company, and a director of that and six other companies. Last year he was awarded the honorary degree of doctor of science in commerce by the Drexel Institute of Technology.

"M.I.T. is very much in his debt," President Stratton said in announcing his retirement as Dean, "and we are delighted that he will continue to be associated with the school as dean emeritus and professor."

The Class of 1963

ON ITS first Saturday night in Cambridge, the Class of 1963 heard Institute Professor Norbert Wiener lecture on "Analysis of Brain Waves." The Kresge Auditorium was nearly filled. Earlier, the class met President Julius A. Stratton, '23, Dean John T. Rule, '21, and Professor Roland B. Greeley, chairman of the Freshman Advisory Council; and heard Deans George R. Harrison and Gordon S. Brown, '31, Visiting Institute Professor Edwin H. Land, and Professor Charles S. Draper, '26, lecture on subjects that many of their parents would find brand new.

These 941 freshmen came from 600 secondary schools, where four-fifths were in the top 10th of their class. Thirty were from foreign countries; and the class included 21 women, a record number.



Dean Howard W. Johnson (left) of the School of Industrial Management, with his predecessor, Dean Emeritus E. P. Brooks, '17.

Radio Observatory's Head Gives Compton Lectures on Universe

A SERIES of six Karl Taylor Compton lectures on "The Universe" will be given at M.I.T. this month by Otto Struve, Director of the new National Radio Astronomy Observatory at Green Bank, W.Va. Dr. Struve (pronounced Stroo-veh) is the author of about a thousand papers on problems of stellar physics and other aspects of astrophysics. His interests have spanned many astronomical specialties, and his fame both as an observer of the stars and theoretician is world-wide.

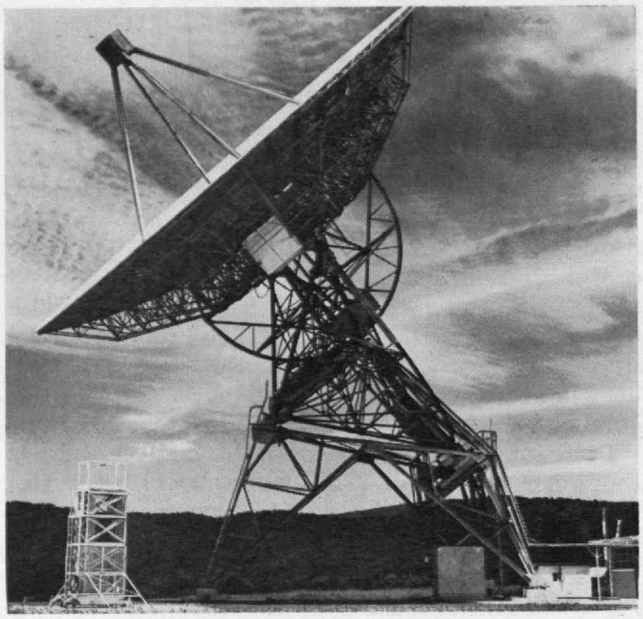
The National Radio Astronomy Observatory which he now heads was established only three years ago. It is operated for the National Science Foundation by Associated Universities, Inc., an educational corporation sponsored by M.I.T. and eight other universities, which also operates the Brookhaven National Laboratory on Long Island.

This observatory was designed to advance the study of the universe with new instruments. It already has erected an 85-foot radio telescope for the use of American astronomers and has a second, large precision telescope under construction now at Green Bank.

When completed in the summer of 1960, this 140-foot telescope, in which about $5,000,000 is being invested, is expected to pick up radio waves transmitted from objects far beyond the range of optical telescopes. The equatorially mounted "bowl" or "dish" with which the sky will be scanned will weigh 350 tons and rise 210 feet above the ground. The supporting yoke will contain 1,202 tons of steel and ballast. These and other units will float on a film of oil .005 of an inch thick. The telescope is designed to be pointed with a precision of a fraction of a minute of arc, and maintain this precision in the face of winds up to 16 miles an hour.



Otto Struve, who will give the Compton lectures this year



This 85-foot radio telescope has been in use since last February at the National Radio Observatory.

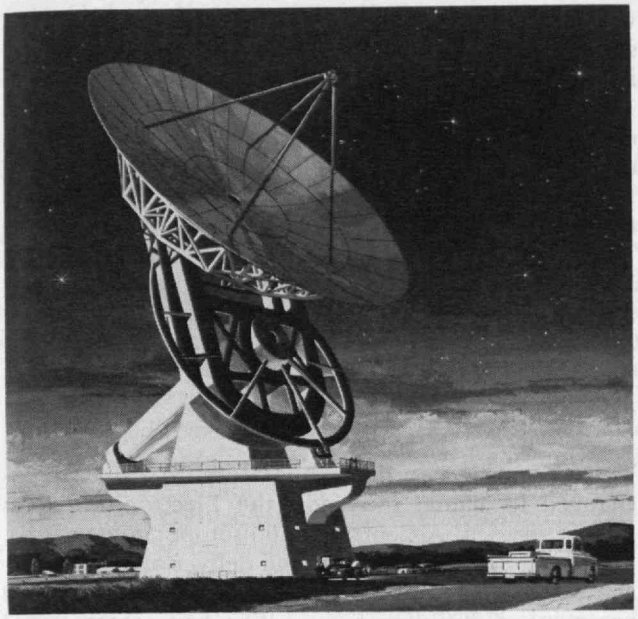
Green Bank was chosen as the site for this precision instrument because of its mild weather, sparse population, and the mountains which effectively shield it from many sources of interference. The U.S. Navy is building an even more gigantic radio telescope in the same vicinity. This one, which is not scheduled to be completed until 1962, will dwarf both the 250-foot dish now in use at Jodrell Bank in England and the 350-foot telescope which the Soviet Union is reported to be planning. The West Virginia legislature has provided for strict control of electrical interference in the area, and the Federal Radio Communications Commission has established a "radio quiet zone" extending for many miles around this new center of astronomical and communication research.

Dr. Struve, who is now 62, left his post as Professor of Astronomy at the University of California to become the new national observatory's first Director last July. His father, grandfather, and great grandfather were astronomers, and he has directed some of this country's greatest astronomical observatories.

The first distinguished astronomer in the Struve family was Friedrich Georg Wilhelm von Struve, who built the Pulkovo Observatory near Leningrad for Czar Nicholas I in 1835 and systematically surveyed the sky for double stars. His son, Otto Wilhelm Struve, succeeded him as Director of this observatory and discovered about 500 double stars. His son, Ludwig Struve, also headed the Pulkovo Observatory and was a dean at the University of Kharkov.

Otto Struve was born in Kharkov and received a diploma of first rank from this university in 1919. He was an artillery officer in the Imperial Russian Army on the Turkish front in 1916-1918 and in the White Russian Army in 1919-1920. He came to the United States in 1921 as a graduate student and assistant in spectroscopy at the Yerkes Observatory of the University of Chicago, and became an American citizen in 1927.

Dr. Struve organized and founded the McDonald Observatory of the University of Texas, and directed



This 140-foot radio telescope is going up now at Green Bank, W.Va. Controls and radio receivers will be in base.

both this and the Yerkes Observatory from 1932 to 1947. Later, at the University of California, he directed the Leuschner Observatory. He is a member of many academies and honorary societies, has received a long list of medals, and has served as President of both the American Astronomical Society and the International Astronomical Union.

He is noted both for his contributions to theories of stellar evolution, and his studies of binary stars, and stars with extended atmosphere. Dr. Struve has been a proponent of the hypothesis that planetary systems are the result of stellar evolution, in contradistinction to theories of collisional or other cataclysmic origin, suggesting that planetary systems such as ours may be exceedingly abundant throughout the universe. He has suggested that life, and even intelligent life, may exist on millions of planets of an enormous number of stars.

His first Compton lecture, at 8:00 P.M. in the Kresge Auditorium on November 3, will be on "The Solar System: Its Origin and Evolution." Dates and topics of the other lectures will be: November 5, "Stellar Evolution"; November 10, "Structure and Evolution of the Galaxy"; November 12, "Radio Astronomy"; November 17, "Binary Stars and Variables"; and November 19, "Man and the Universe." Alumni will be welcome at all of these lectures.

While at M.I.T., Dr. Struve also will participate with distinguished scholars of the Institute and other schools in three seminars. The first, on November 6, will deal with "Nuclear Stellar Evolution"; the second, on November 13, with "Extraterrestrial Life"; and the third, on November 20, with the lively topic, "Cosmological Theories."

The Karl Taylor Compton lectures were planned to honor the Institute's ninth President by dramatizing the combined scientific, cultural, and philosophical concerns emphasized in his 25 years of leadership. The first series of these lectures, given two years ago by Professor Niels Bohr, dealt with "The Philosophical Lesson of Atomic Physics."

90 Umbrellas in Moscow

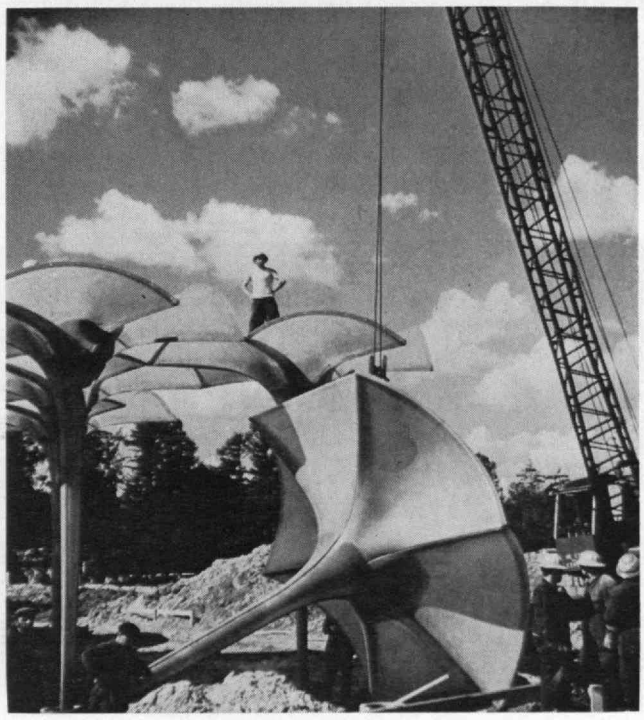
ALBERT G. H. DIETZ, '32, Professor of Building Engineering at M.I.T., was jet-propelled to Moscow last summer to help raise roofs for the American Exhibition. No such roofs had been built in this country. These were for the three pavilions that housed the much-discussed Fashion Show, the "Family of Man" photographic exhibit, and the Architectural Exhibit.

Each roof consisted of a cluster of glass-fiber reinforced plastic umbrellas 20 feet high. The hexagonal tops of these big, man-made flowers permitted them to be fitted together to meet the requirements of the exhibits. Each unit weighed 700 pounds, and was supported by a precast concrete footing. Ninety of these umbrellas were assembled and raised in a week despite rainy weather, language handicaps, and the Russian workmen's unfamiliarity with such materials and forms.

Designed by George Nelson Associates, and approved after intense studies in which Professor Dietz and Assistant Professors Frank J. Heger, Jr., '48, and Frederick J. McGarry, '50, participated, the units were molded in this country by Lunn Laminates, and shipped to Russia via Helsinki. Russian sheet-metal workers put them up under the direction of Jack Parris of the Lydick Roofing Company of Fort Worth, Texas.

The resin was chosen for its fire resistance rather than its durability. To make certain that Moscow breezes would not send ripples through these plastic flowerbeds, a few units were erected beforehand on Long Island and subjected to the gusts from some B-26's.

"The finished canopies," says Professor Dietz, "had a light greenish cast that blended well with the pines and the other trees in Sokolniki Park, and provided the soft, diffused light that the exhibitors wanted."



Plastic "flower gardens" provided the roofing for American exhibits in Moscow. This is the way units were set in place.

Magnetic-Film Computer Memory

A MEMORY is as useful to a modern digital computer as to a person: to carry out even a simple task, a computer must be able to store a great deal of information and recall it as needed. (*See* "Machine Learning," by Arthur L. Samuel, '25, on page 42.) Large capacity, high speed and extreme reliability are important considerations in designing computer memories; physical size, power consumption, cost and simplicity of design and construction are other interrelated factors.

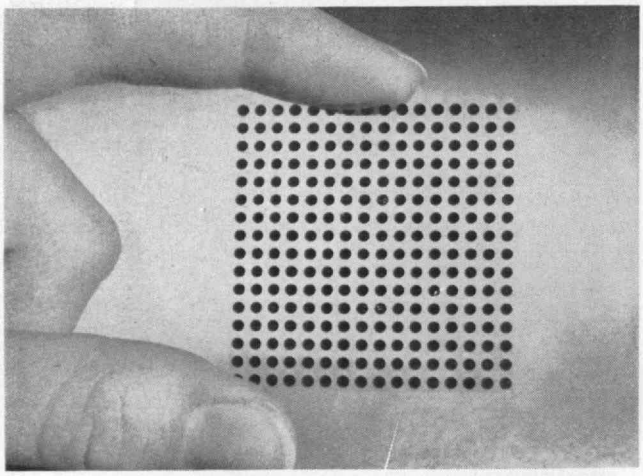
The fastest, most versatile computer memories in general use today store information magnetically in tiny, doughnut-shaped "cores" of ferrite material. These were an important M.I.T. contribution to computer technology, resulting from research and development work at the former Digital Computer Laboratory and at Lincoln Laboratory. Lincoln built the largest such memory ever attempted, with more than 2,500,000 cores; it is now part of the TX-2 computer. Conventional memories of this type have read-and-write cycle times of 5 to 10 microseconds.

As potential successors to ferrite cores, thin films of magnetic materials have been investigated in many laboratories. Magnetic films can be switched faster than cores with appreciably less electrical power; they easily can be driven by transistors instead of vacuum tubes, with greatly increased reliability. Wires can be laid along the top of a row of film elements, eliminating the difficult task of threading three or four wires through the center of each individual core (a hole .05 inch or less in diameter), and this contributes to the possibility that magnetic film memories can be fabricated more simply and packaged more compactly than core memories.

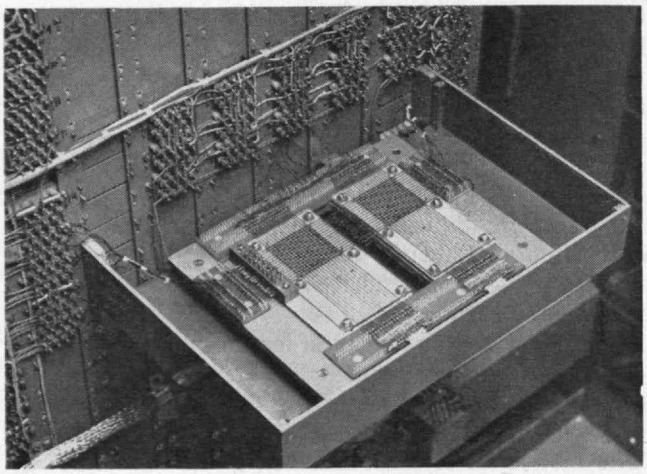
Realization of these potential advantages requires solution of problems of film fabrication, memory packaging, and associated circuitry. Engineers and scientists at Lincoln have solved these problems to the degree necessary to construct a small prototype. This memory, the first magnetic film memory ever installed in a computer, has functioned successfully as part of the TX-2 since July.

It is completely transistor-driven, its current requirements are low, and it is about 10 times as fast as conventional core memories. Each element is a circular spot of Permalloy film .000003-inch thick and $\frac{1}{16}$ inch in diameter. The film spots are 82 per cent nickel and 18 per cent iron. They are deposited by evaporation on a flat glass substrate .005-inch thick, in 16-by-16 unit arrays as shown in the photograph on this page.

The magnetic-film memory is another milestone in the steady advance of modern computer technology. This memory, and the TX-2 computer of which it is a part, were developed by Lincoln Laboratory under an Air Force contract, with the joint support of the Army, Navy, and Air Force.



Spots of magnetic film in this memory unit play same role as doughnut-shaped cores now used in many large computers.



This magnetic-film computer memory, developed at Lincoln Laboratory, is driven completely by transistors around edges.

News You May Have Missed

THE Servomechanisms Laboratory at M.I.T. has changed its name: it is now the Electronic Systems Laboratory. . . . A Central Radioisotope Storage Area, to receive, unpack, monitor, and deliver or store radioactive materials sent to M.I.T. has been built in the basement of Building 6. . . . The first international conference ever held in the United States on the use of atomic energy to preserve food was held at M.I.T. last summer: 24 nations were represented. . . . Institute publications won a first-place medal and three citations of merit for the Office of Publications at this year's meeting of the American College Public Relations Association: the citations were given for the Institute's catalogue, the annual report, and student recruitment materials. . . . M.I.T. has received a $10,000 grant from the Rockefeller Foundation for a study of "the politics of outer space" to be directed by Professor Lincoln P. Bloomfield.

Stress Measurers' Meeting

A STRESS Measurement Symposium will be held on January 25 to 29 at Arizona State University. Peter K. Stein, '49, Associate Professor of Engineering there and editor of *Strain Gage Readings,* will discuss basic concepts; Given A. Brewer, '38, strain gage applications; Greer Ellis, '38, brittle coatings, and William M. Murray, '33, Professor of Mechanical Engineering at M.I.T., the possibilities and limitations of four basic stress-measurement methods.

A Schoolhouse Built of Plastic Panels

THE photos on this page are of a model of a plastic schoolhouse. Such a building could be expanded, converted to new uses, or taken apart, moved and reassembled. The model was built at M.I.T., as part of a study of architectural uses of plastic sandwich panels under a grant-in-aid from the Plastics Division of the Monsanto Chemical Company by a staff headed by Marvin E. Goody, '51, Assistant Professor of Architecture.

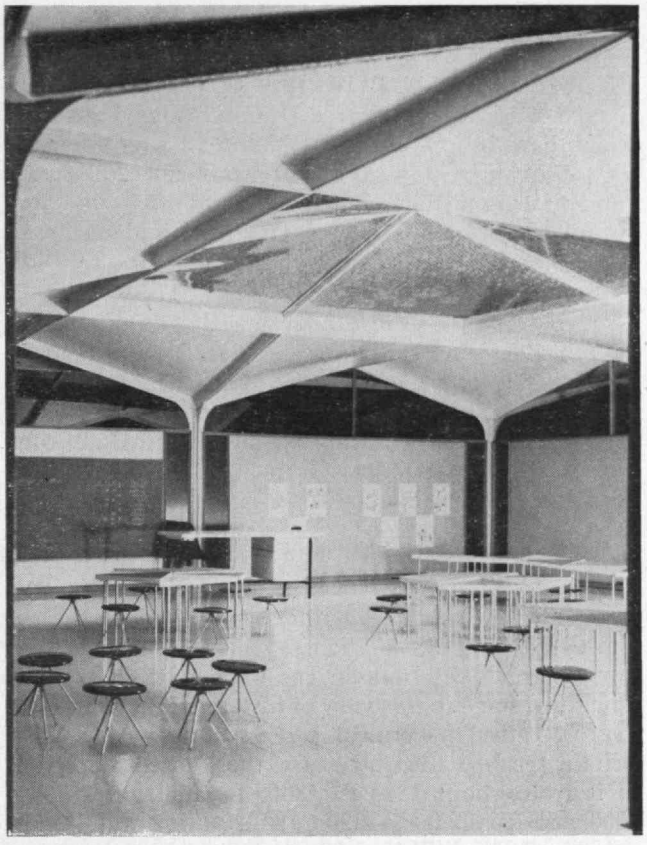
The load-bearing sandwich panels used in this design have thin outer skins bonded to a core of plastic foam. An eight-foot square panel weighs only about one-tenth as much as a comparable concrete shell. The panels in the exterior walls, like those in the roof, could be Fiberglas reinforced polyester, and varied in color and texture. Many different types of facing are available for interior walls.

School committees, working with their architects and planners, says Joseph Schiffer, special research assistant and designer, could employ the sandwich-panel concept to obtain a flexible shelter for a variety of educational systems.

"This school," adds Professor Goody, "is a versatile, complete package. To obtain the benefits of flexibility that it offers probably would cost slightly more — at this time. Eventually, as mass production and improved manufacturing techniques lower material costs, a plastic school incorporating the versatility that a regular building cannot offer should be possible at significant savings. We figure, too, that the planning time for a full-scale building can be cut approximately one-third, and the actual construction time can be cut in half."

Additional research is needed, however, in some areas. The use of newly developed plastics to decrease sound transmission, and introduction of less expensive chemicals for fire retardancy, for example, are being studied now.

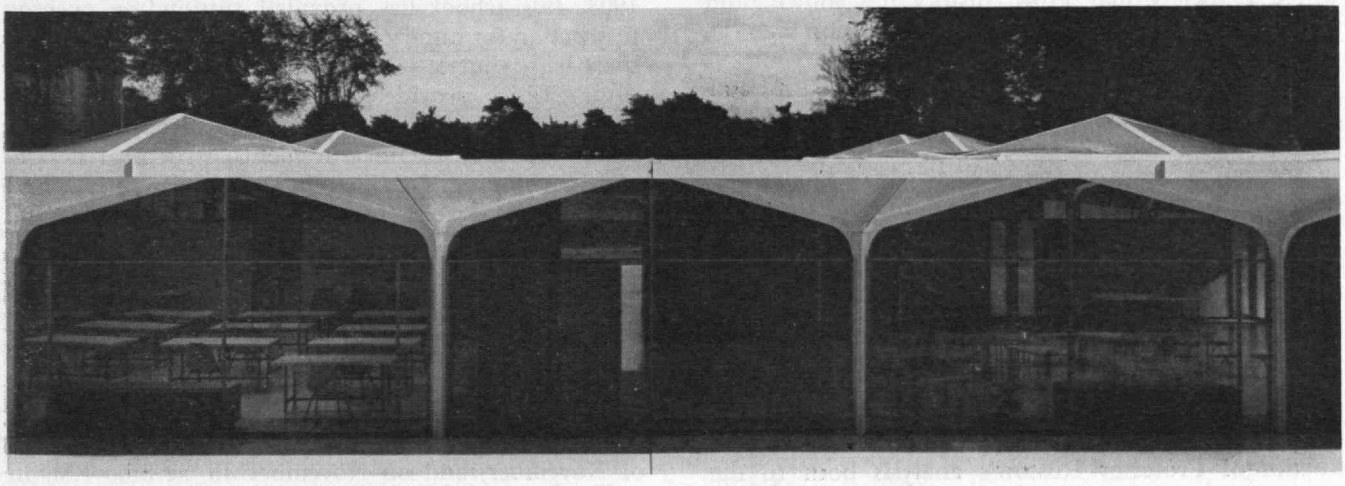
The project staff is from both the Department of Architecture and the Department of Civil and Sanitary Engineering.



Sandwich panels at rear of classroom in plastic school are movable. Translucent skylight is in center of room.



Glass walls admit additional light. Heating or cooling units are installed independently, as the model shows.



Plastic school's roof consists of hyperbolic paraboloid panels supported by central columns. Additional 16-by-16-foot units can be added to school without complications. Drainage is through the columns of these "tree units."

An Answer to Marxism

PROFESSOR WALT W. ROSTOW of M.I.T. delivered a series of lectures at Cambridge University which have been attracting widespread attention since *The Economist* (last August 15 and 22) published a condensation of them and called them one of the most stimulating contributions to political and economic discussion by an academic economist since the war.

Professor Rostow's subject was "The Stages of Growth," and these lectures can well be described as "a non-Communist Manifesto," because in them he presented an alternative to the Marxist interpretation of modern history. Karl Marx saw the stages of growth as feudalism, bourgeois capitalism, socialism, and communism. Professor Rostow sees five other broad categories into which the countries of the world fall, and has traced the growth of many countries through these stages.

The pre-Newtonian world was a world of *traditional* societies, in which production was limited by meager knowledge of science. Then came a *transitional* stage, during which the foundations were laid for changes. The third stage in this view of history is what Professor Rostow calls "the crucial process of *take-off*." Great Britain reached this stage first, the United States was in it from about 1843 to 1860, Japan from 1878 to 1900, and Russia from 1890 to 1914; China and Turkey are regarded as still in this stage.

A *maturing* stage, in which new methods and outlooks spread through the economy, follows the take-off; and this has led in some societies to a fifth stage of *high mass consumption*. This kind of growth, Professor Rostow believes, is still gathering momentum in western Europe and Japan, and has by no means ended in the United States.

There are far greater differences, of course, between the Marxian view of history and Professor Rostow's view than this mere listing of terms reveals. Professor Rostow, for example, points out how nationalism as well as the profit motive has figured in growth, how various sectors of the economy have stimulated the growth of the whole economy, how the type of leadership and the government's role changes as societies grow, and some of the interesting alternatives that arise. Communism is by no means the only route by which a society may grow, history has shown, and the resources resulting from modernization can be employed in any of several ways.

There have been three kinds of wars, Professor Rostow suggests: Colonial wars, arising from colonial powers' intrusions on transitional societies; limited aggression, as states in the early stages of modernization look backward to past humiliation and forward to new opportunity; and massive wars, arising from attempts to win hegemony over Eurasia and the world. He traces such struggles, cites communism's errors, and concludes that "the fate of those of us who now live in the stage of high mass consumption will be largely determined by the nature of the pre-conditions process and take-off in distant nations."

An editorial in *The Economist* pointed out the pertinence of Professor Rostow's analysis both to the West's current relations with Russia, and dealings with less developed nations. The Russian government, this editorial suggested, has three choices: To seek world power, to choose high mass consumption, or to advance toward human dignity and freedom. The West's problem is "to make the choice of a high consumption economy (and, if possible, of a freer society) as easy, as natural and as face-saving for Mr. Khrushchev as it can." A second task is "to cope equally imaginatively and sensibly with the other colossi that will be following close after.

"Even the most ardent enthusiast (for Professor Rostow's views)," says *The Economist*, "would claim no more than that they set down some familiar truths in a new and interestingly formalistic dress; those who are irritated rather than tickled by the way in which he may seem to claim to have invented a diabolical law of perpetual historical motion, and embodied it in a steamroller, can take comfort from the fact that his whole point is that this steamroller's eccentricities are possible to avert. The extent to which we succeed in averting them will determine the future of our age."

Dr. Wiesner's Responsibilities

THE additional duties of Acting Head of the Department of Electrical Engineering were assumed this fall by Jerome B. Wiesner, Director of the Research Laboratory of Electronics, and a member of President Eisenhower's Science Advisory Committee, the Army Science Advisory Committee, and the Department of Defense Science Advisory Committee.

"Dr. Wiesner has been a vital force in the enhancement of the work of the Department for a number of years," President Stratton noted in announcing the appointment. "He has initiated many important activities that have given the Department an enviable reputation as a center for graduate education. As a vigorous participant in the undergraduate activities, he also has contributed greatly to the work of his faculty colleagues in pioneering new syntheses of electrical technology and in their implementation in the form of a new curriculum and in the Course VI-B Option, Electrical Science and Engineering."

Foster Heads Lowell School

THE Lowell Institute School opened this fall under a new Acting Director, F. Leroy Foster, '25. Founded in 1903, this school has provided tuition-free evening instruction for hundreds of industrial workers. It offers three basic courses — Mechanical, Electrical, and Structural — which provide fundamental training in mathematics, physics, thermodynamics, hydraulics, testing materials, electrical measurements, structural design, and machine design. The classes meet at M.I.T. and the Institute is well represented on the school's faculty.

The Arthur D. Little Lecture

A DISTINGUISHED geneticist, Dr. George W. Beadle, who is chairman of the Division of Biology at the California Institute of Technology, will be the 1959 Arthur Dehon Little Memorial Lecturer. He will be in residence at M.I.T. during the first two weeks of November, and on November 16, at 8:00 P.M. in Kresge Auditorium, he will speak on "The Place of Genetics in Modern Biology."



On display here are some of the many books produced by men at work in the M.I.T. Center for International Studies.

Support for International Studies

AN $850,000 grant from the Ford Foundation, announced last summer, has partially relieved the Center for International Studies at M.I.T. from dependence on short-term grants. It will cover salaries of several senior members of the Center for 15 years, and provide for graduate fellowships and help defray other expenses for 10 years.

"The research publications of the Center have been widely and favorably known for a long time," John E. Burchard, '23, Dean of the School of Humanities and Social Science, observed when this was announced. "It has not been so generally appreciated that the Center staff has made notable contributions to our teaching program, graduate and undergraduate. In this our students have gained a great deal from the practical experience the Center's staff has gained in its work all over the world. But in this fruitful arrangement there has been an element of instability because a number of the senior members of this staff were not permanently attached to our regular Faculty. The present Ford Foundation grant will materially assist us in stabilizing this situation, in reviewing the gains already made, and in expanding on these fine beginnings."

Phosphorus Improves Teeth

PHOSPHATES in the diet reduce dental cavities, Robert S. Harris, '28, Professor of Biochemistry of Nutrition, told an international conference on oral biology in New York early this fall.

Ten years ago he and Dr. Abraham E. Nizel, '51, a Boston dentist and research associate at M.I.T., found that hamsters fed corn and milk produced in New England had poorer teeth than those fed corn and milk produced in Texas. By a long series of experiments, prompted by this puzzling difference, they found that the ash of foods acted strongly against dental decay when added to the diet of hamsters, and that it was the phosphorus in the ash which was responsible. A hamster's teeth, fortunately, develop about 20 times as fast as a man's. Now, by adding metaphosphoric acid pellets to hamsters' diets, they have grown animals with lustrous, pearly white teeth and no cavities.

"The development of knowledge of the relationship of phosphorus to dental caries," Dr. Harris said in reviewing his own and others' work, "is an interesting example of how several investigators trained in different disciplines, located in different countries, working with different experimental materials, and searching for the answer to different questions, make the same discovery.

"It has been known for many years that the enamel of teeth consists largely of calcium and phosphorus; that populations living on sophisticated diets containing significant amounts of refined cereals were susceptible to dental decay; and that animals fed semirefined diets containing as much as 70 per cent sugar, but well balanced nutritionally with animal proteins and vitamin and mineral mixtures, often did not develop dental decay. The combined results of research from several laboratories in recent years have helped to explain how the level of phosphorus in the diet may influence the susceptibility of animals and man to dental caries.

"Almost without exception, investigators have noted decreases in the incidence and severity of experimental caries when phosphorus was added to caries-producing diets. The data vary primarily because of differences in experimental conditions. However, the literature indicates that diets containing phosphorus are effective in the prevention of dental caries in rats, hamsters, and children."

(Concluded on page 58)

M.I.T. Dedicates a New Building

MRS. LAMMOT DU PONT, mother of the late David Flett du Pont, '56, formally presented the new Athletic Center that bears her son's name to M.I.T. at dedication ceremonies in the lobby of the new building on Monday, October 5. James R. Killian, Jr., '26, Chairman of the M.I.T. Corporation, presided; President Julius A. Stratton, '23, accepted the building for the Institute, and Richard E. Kaplan, '60, President of the student Athletic Association, eloquently expressed the appreciation of the students for the new facilities.

Mrs. du Pont spoke briefly, recalling the deep affection of her son for the Institute and his understanding of the need for facilities for "quick exercise," which inspired the $1,000,000 bequest to the Institute that made this building possible.

Dr. Killian recalled David du Pont's fine record as a student, declared that now for the first time in its history the Institute's facilities for athletics are truly adequate, and predicted that many generations will benefit from the thoughtfulness of the building's donor.

Dr. Stratton expressed the warm regard and esteem of the Institute for both David du Pont and his father, congratulated those responsible for the planning of this center, and declared that the new facilities will help the Institute realize the goals of its total educational program. "Society asks of most men," he pointed out, "more than sheer intellectual ability."

Mr. Kaplan spoke extemporaneously. He praised David du Pont's understanding of the attitude toward athletics at M.I.T., and stressed the importance of the program by noting the many ways in which it is "helping men grow." The new building, he said, will help the Athletic Association develop a still better program, that will draw more men into helpful recreational activities in student days.

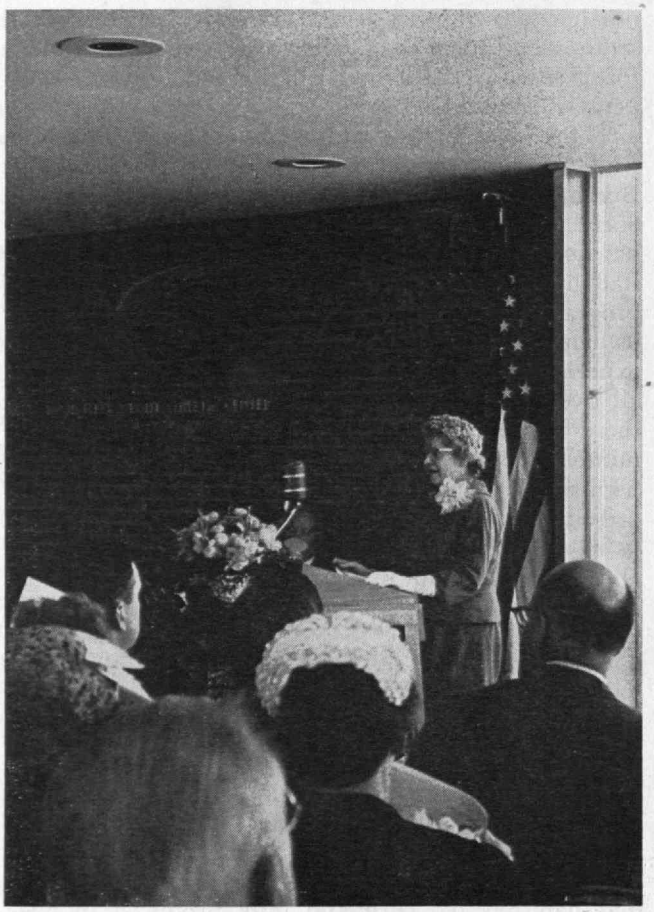
His remarks were heartily applauded by the 250 guests, including several members of the Du Pont family, many members of the M.I.T. Corporation (which met in Cambridge that day), department heads, and distinguished members of the Faculty and Administration. Luncheon was served in the large new gymnasium of the building following the ceremony.

Dr. Killian then introduced Richard L. Balch, Director of Athletics at the Institute, who expressed his Department's appreciation of the new quarters, called attention to its numerous attractive features, and spoke of the goals of the M.I.T. athletic program. (His views are set forth in the article which begins on page 30 of this issue of The Review.)

Before inspecting the new building, Mrs. du Pont went to see the David Flett du Pont tennis courts, which were constructed because of her son's interest in tennis. She then toured the new facilities which will be used for many different sports.



Mrs. Lammot du Pont was shown the new Athletic Center by Richard L. Balch, the Director of Athletics.



Mrs. du Pont officially presented the building, which her son's generosity made possible, to the Institute.

David Flett du Pont, '56



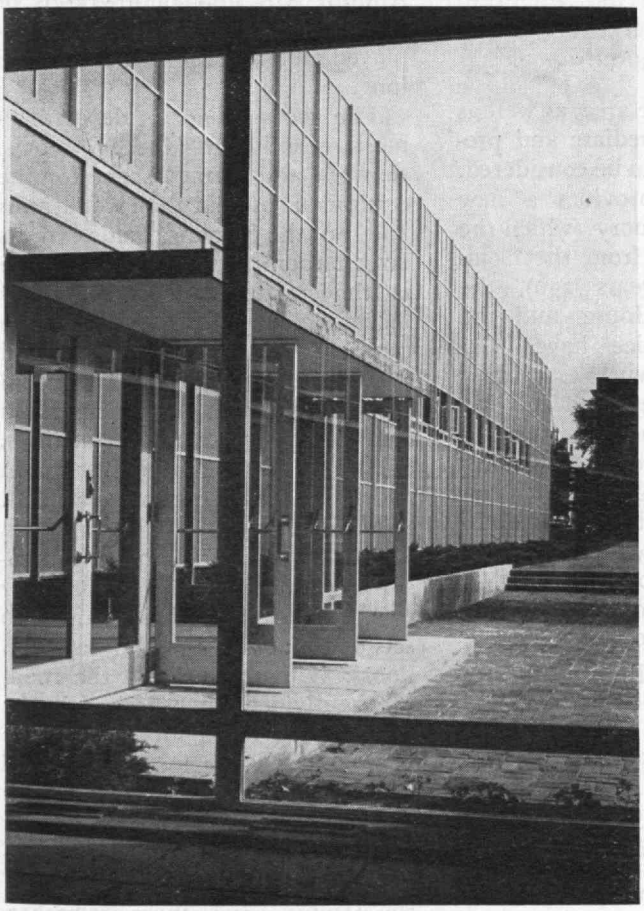
THE new Athletic Center at M.I.T. was made possible by a bequest of $1,000,000 from David Flett du Pont, '56, (at right), who was fatally injured in an automobile accident on Fisher's Island, N.Y., in the summer of 1955, shortly before he was due to return to the Institute.

His father was Lammot du Pont, '01, who died in 1952 after being President and Chairman of the Board of E. I. du Pont de Nemours and Company, Inc., and a term member from 1928 to 1933, and life member from 1934 to 1952, of the M.I.T. Corporation.

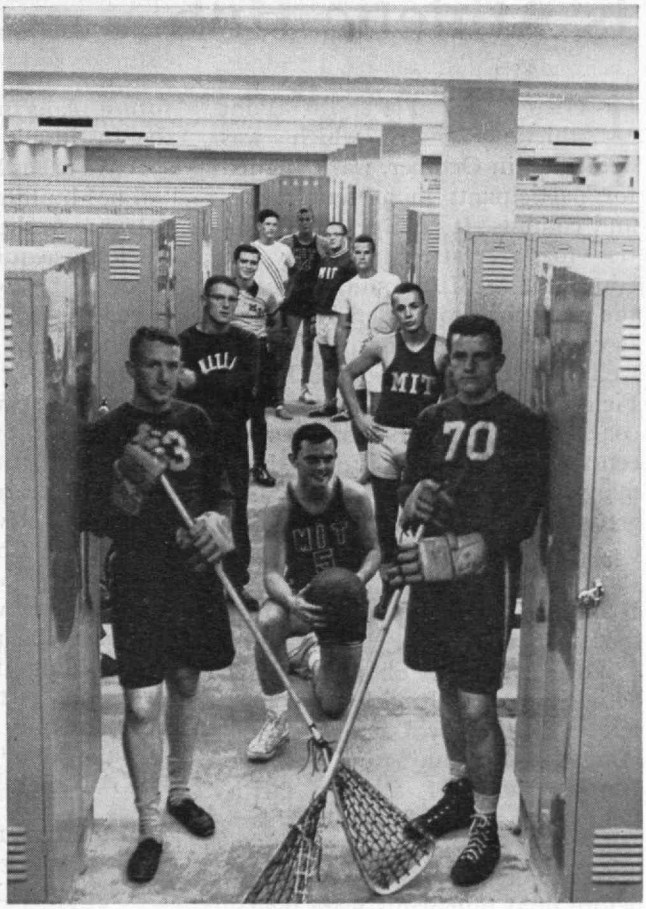
David du Pont was a 1952 graduate of the Tower Hill School who majored in metallurgy after coming to the Institute. His favorite game was tennis.

Part of his bequest was used to replace eight substandard courts in 1957 with 12 new ones. The David Flett du Pont courts (pictured on page 32) are considered the finest collegiate tennis facilities in the Northeast now. Six are all-weather courts, and six are fast-drying courts for match play. They have proven so attractive that about 600 undergraduates per year have been introduced to the sport or led to keep it up since they were built.

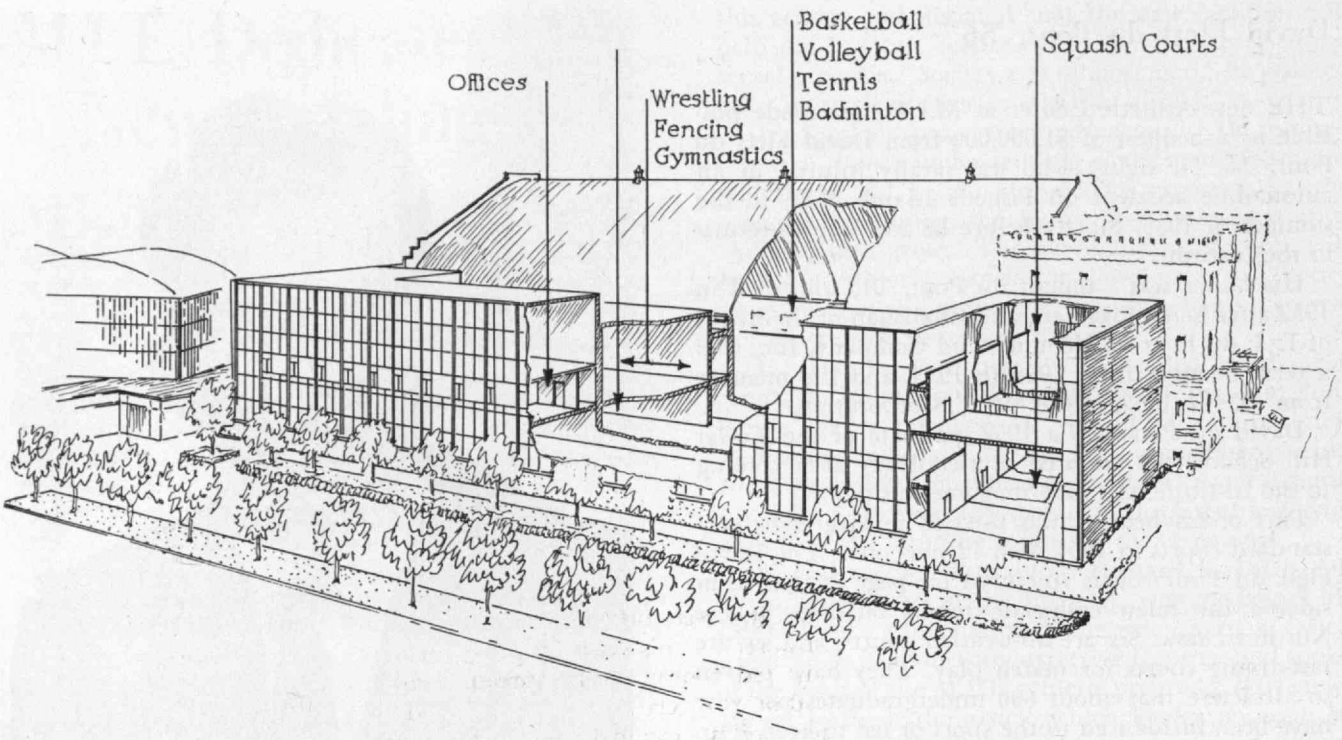
The David Flett du Pont Athletic Center is expected similarly to increase the extent of student participation in physical recreation. It will serve players in both indoor and outdoor games.



This glass wall faces Kresge Auditorium and the Chapel. The new building connects three older ones.



Lockers nearly fill the first floor. They are for participants in many different athletic activities.



Du Pont Center Is Athletic Hub

THE David Flett du Pont Athletic Center, which was dedicated in October, was designed for participants in athletic games and contests. It enlarges the facilities for recreation and physical education at M.I.T. and increases the usefulness of older buildings. It connects the Armory, the Rockwell Athletic Cage and the Briggs Field House, and gives teachers, coaches, and student managers a central headquarters from which many different kinds of physical activity, both indoors and out, can be enjoyed, stimulated, and guided. Its locker and shower rooms will accommodate more people than its spaces for spectators.

This new hub of recreational activities was built with $1,000,000 left to M.I.T. by David Flett du Pont, '56, of Wilmington, Del., for "improvement of athletic facilities." Four years of planning preceded its construction, and 18 different designs were worked out before final blueprints were made. The different shapes and floor levels of existing buildings, and future plans for the area, as well as the Institute's immediate and prospective needs had to be considered.

The building provides a new entrance to the Armory (which the Institute acquired from the Commonwealth two years ago), the Cage, the Field House, and the playing fields, which have been enlarged by removing temporary housing that was erected in wartime. It also enhances the appearance of the three older buildings when they are approached from the Charles River, the Kresge Auditorium, the Chapel, or the dormitories along Memorial Drive. Its 240-foot long window wall, which will often be photographed, gives the building the appearance of a three-story structure, although there are only two main floors.

In the lobby, letters carved in a slate slab spell out:

DAVID FLETT DU PONT
ATHLETIC CENTER
GIFT OF DAVID DU PONT
CLASS OF 1956

Here there are cases on the walls for the display of trophies won by Institute teams in the past, and up a short flight of stairs visiting Alumni will find photographs of many famous teams and players displayed on a bulletin board 60 yards long.

The ground floor is devoted almost wholly to locker rooms, showers, and storage space for the equipment used in the gymnasiums and on the playing fields. In its largest room, 50 by 147 feet, there is the greatest concentration of lockers anywhere on the Institute's campus. Nearby are dozens of showers for men, a separate room for visiting teams, a trainers' room containing therapeutic facilities, and a 20 by 36-foot locker room and half dozen showers for women.

Above these dressing rooms is a 48-foot wide multi-purpose gymnasium, with hardwood flooring over cork, fluorescent lighting, and two sets of 16-foot high folding wooden doors. With these doors, the room can be divided when desired into a 70-foot long room for wrestling, a 59-foot long room for fencing, and a 43-foot long, well-equipped room for individual exercise.

Across a corridor from this gymnasium is the huge drill floor of the Armory, where there are basketball, indoor-tennis, badminton, and volleyball courts. Across a corridor

on the other side of the new gymnasium are the offices of the directors of athletics and physical education, the coaches, student Athletic Association officers, and student managers. Here there is also a conference room, and a locker room for the use of the Faculty and coaches.

These corridors, incidentally, are a feature of the building that interests planners of commencement exercises, Alumni Day dinners, and other such events as well as athletic managers: They will enable processions, dinner guests, and other visitors to go from one building to another without stepping out into the hard-to-predict weather of Cambridge.

At the eastern end of the 80-foot wide structure, directly behind the brick wall which faces Massachusetts Avenue, there are six new squash courts, three on the ground floor, and three above. Spectators' galleries run the length of each set of three courts, and are entered from different levels than those on which players come and go. Behind these courts, above the offices, are the machinery and piping for the hot water and steam services and the heating and ventilating.

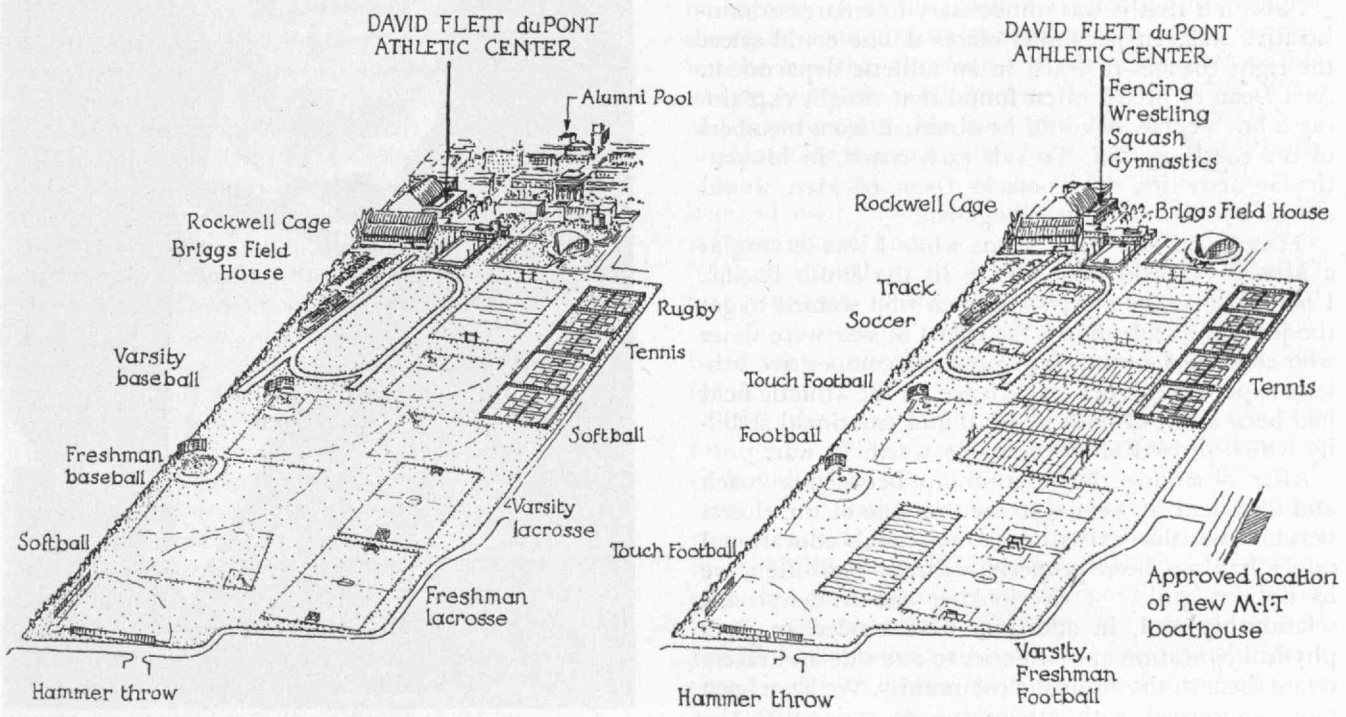
From top to bottom, there are innovations in the building which have intrigued the sidewalk superintendents of its construction. Part of the roof, for example, is reinforced concrete, two feet two inches thick, but lighter than its appearance suggests because inside it are wax-coated, hollow cardboard tubes, closed at both ends. This method of providing an economical structural slab is just coming into general use.

The most distinctive feature of the building, however, is now well concealed beneath it. This is its foundation, which differs materially from those of all of the other M.I.T. buildings. Below the building there is a bed of soft clay, covered at a depth of about 20 feet by a crust of sand and gravel, and the building rests on piles which are anchored in this crust by pressure-injected footings that spread the load over the clay.

These piles, commonly called "displacement caissons," or "pressure injected footings," were pulled into the earth by a method devised in Belgium nearly 50 years ago by Edgar Frankignoul. It has since been introduced on all six continents, but has been used for only a few years in the Boston area. It was brought to this country by the Franki Foundation Company, of which Leon A Fraikin, '31 is now chairman of the board. This company installed the 215 piles that support the new Du Pont building.

No excavating is needed for a Franki foundation. A hollow manganese steel tube, 20½ inches in diameter, is erected at the spot where the plans call for a pile, and the lower end of this tube is plugged with a few cubic feet of dry, granular material. A 7,000-pound ram, falling 20 feet, strikes this plug, and drives it into the earth; surprisingly, it pulls the tube down with it. When the desired depth has been reached, the tube is anchored tightly to the driving rig and the plug is knocked out with more 140,000-foot-pound blows. Damp concrete is then poured down the tube, alongside the ram, and driven out the lower end of the tube until a large bulb has been formed as a footing.

The architects were Anderson, Beckwith, and Haible and construction of the building was undertaken by the George A. Fuller Company in February, 1958. The structural engineers were Severud-Elstad-Krueger Associates of New York; Delbrook Engineering, Inc., Cambridge, were the mechanical engineers, and Edwin P. Mahard, the electrical engineer.



THE PLAYING FIELDS OF M.I.T

The Role of Athletics at M.I.T.

BY RICHARD L. BALCH

A recreational program in which thousands participate helps refute the cult of easiness, and helps develop the universal man . . . the Director of Athletics writes

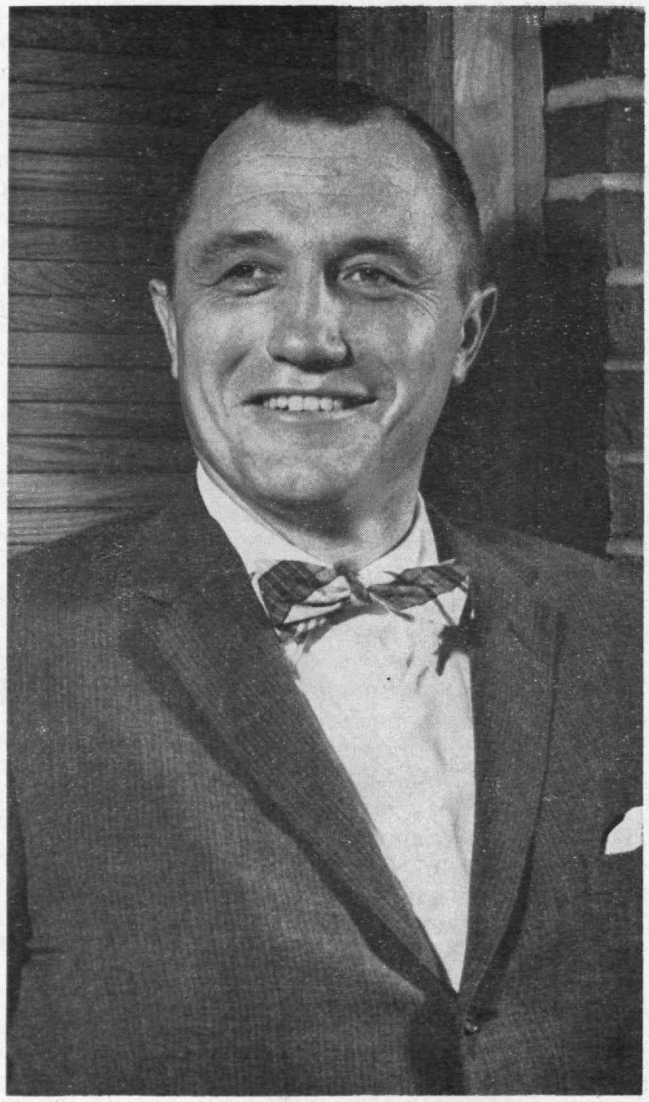
AFTER six years as Dean of Men at Stanford and, prior to that, two years as an Admissions Officer at Union College in Schenectady, N.Y., I became convinced that American universities must decide whether an athletic program is a part of education which affords purposeful recreation, or is a business through which universities finance a part of their educational obligation.

It occurred to me that an attempt to develop an athletic program which is a part of education could best be made by an institution in which gate receipts were not charged. Recreation for students then would have to be the basic reason for the existence of the athletic department.

I also felt that it was unnecessary to enlarge administrative staffs in personnel offices if one could select the right coaches to teach in an athletic department. As a Dean of Men I often found that insight explaining a boy's behavior could be obtained from members of the coaching staff. To call each coach, in his particular activities, an ex-officio Dean of Men would not be a misnomer in my judgment.

These ideas first came to me while I was serving as a Motor Torpedo Boat Officer in the South Pacific. I noticed that the officers and men who seemed to get the job done and survive the rigors of war were those who combined brains with previous competitive athletic experience. Their experience on the athletic field had been a test of both physical and emotional stability which proved of considerable worth in war.

After observing the relationship between a coach and a student, it seemed to me that one of the closest personal ties that exists in a young man's educational career had not been properly utilized. Too often, we have been guilty of overlooking the student-coach relationship and, in addition, have tended to push physical education and athletics to one side and rarely relate them to the academic community. We have been more concerned with attempting to rationalize the existence of college athletics than with identifying them as an important educational tool. If a stimulus



Richard L. Balch is associate professor of physical education, director of athletics, and head of the department.

to learn could be developed in all classrooms which could capture the elements of initiative, concentration, perfection, and pride inherent in athletic achievement, the art of teaching could return to the prominent and respected status it once enjoyed.

At M.I.T. we have attempted to promote a program in which each student is given the chance to experience some physical activity. We have made available those sports which may be enjoyed both in college and in later life.

It is my hope that more of the other universities in the United States will remove themselves from the temptations of the entertainment business and return to the job of stimulating the vast resources of the human mind and spirit.

Participation at M.I.T.

During the 1958-1959 academic year, 3,182 M.I.T. students were registered in 30 physical education classes, about 3,500 men played on the 421 teams that competed in 14 kinds of intramural contests, and one out of every four students participated in one or more of 19 intercollegiate sports.

Our particular athletic program, tailored for a university in which science rather than football is the emotionally integrating symbol of the campus, has been evolving since the Institute was founded nearly a century ago. As in other schools, student interest sparked, if not organized, the 19 teams that now compete on an intercollegiate level. They were aided and encouraged by the former Alumni Advisory Council on Athletics which was organized in 1898 and served continuously until succeeded by Ivan J. Geiger as Athletic Director in 1947. Athletic Council members (Major Frank H. Briggs, '81, Dr. John A. Rockwell, '96, Henry E. Worcester, '97, Dr. Allan Winter Rowe, '01, Ralph T. Jope, '28), Mr. Geiger, and others have preserved the continuity and the gradual development of facilities has encouraged the growth of this program. Now the Institute's facilities are comparable to those of any other prestige university in the country.

Thanks to the careful planning of our predecessors, we are not concerned, as many institutions are, with the problem of filling a football stadium while maintaining complete integrity as an academic institution of "high degree." We can state with confidence that our policy is to provide an athletic program for the individual student which serves our educational objectives and provides wholesome recreation. In so doing, we encourage a maximum of student participation in athletics, promote student responsibility in management, and give vigorous support to the interests of students who engage either in intramural or intercollegiate competition.

The Athletic Director's responsibilities at M.I.T. do not include the administration of a sideshow competing with others in the entertainment world. There simply is not room in the curriculum for an athletic program outside the broad definition of recreation, which is "to refresh in strength or spirit after toil or anxiety." Our intercollegiate contests are recreational rather than a means of procuring funds for the support of all or part of the athletic program.

Emphasis has been placed in this program on teaching or enhancing skills in recreational activities that may be carried on in later life. A student does not have freedom of choice among an endless array of activities; our physical location precludes some. But there is a wide spectrum from which the undergraduate can choose in class programs, intermural, and intercollegiate sports.

The Universal Man

In describing what we are doing in the Athletic Department, I prefer to bypass categories of "the well-rounded man," "the whole man," and other terms having to do with the symmetry of the body.

"The universal man" is a more definitive term. To quote Webster, such a term describes a man "versed in or embracing, a wide range of subjects, pursuits, etc." Universality suggests the magnitude of the education available at M.I.T. and the caliber of man who ought to be involved. "The universal man" is a phrase that conveys the breadth of the ultimate purpose of a university education. That purpose, to me, is basically to produce individuals – even some lop-sided ones – who are willing to accept the challenge and responsibility of critical thinking.

The men employed to teach physical education and to coach intercollegiate sports are asked to learn to know the individuals, their capabilities and limitations, and always to keep an eye on their academic records. The athletic staff has been able to supplement the collective effort of the Faculty to gain insights regarding the undergraduates. Brief statements, written by the coaching staff, of the extra-class efforts of students are sent to deans, department heads, and registration officers, whenever such knowledge appears likely to be useful. This eliminates much of the busy work of student personnel offices in other universities.

Automation has not replaced the human element at M.I.T. After four years' observation, I believe M.I.T. is whatever a student wants to make it. He can, if he chooses, sit at his place of residence and visualize the entire community as an impersonal degree factory, but he has the alternative of devoting part of his leisure hours to participation in the breadth of an M.I.T. education. He may join the Choral Society, Student Government, The *Tech*, any of a multitude of clubs, or participate on an athletic field. The only demand made upon the individual is that, when he makes a choice, he must do so with a sense of responsibility to contribute his best. The difficulties faced by many students in this regard are basically the result of being lost in a maze where responsibility is confused with authority and freedom to act is mistaken for license.

The athletic staff's mission is to expand the opportunities for self-evaluation and enlarge the choices that each individual has made during his first 17 or 18 years of life, rather than to seek perfection of athletic prowess without regard for educational goals and individual differences. To promote maturity, it is necessary that we re-enforce the student's understanding of the role he undertook when he matriculated at M.I.T. Each student must become increasingly aware that his choices become more meaningful to him as he advances.

Particularly is this true for M.I.T. students in an age when the understanding of science may be a

determining factor in world politics. The contribution our students make, regardless of their specialties, may well be the ability to interpret scientific thought for those less well informed in conceptual realms of science. It is the purpose of the athletic program to foster physical fitness, emotional control, leadership, and the development of recreational habits. By this effort we hope to aid in building a universality of experience that will provide a base from which an M.I.T. graduate may be able to impart his professional knowledge.

Discouragement of Nonchalance

A pseudo-sophisticated attitude toward athletics has become fashionable in America. The vast majority of students have become spectators rather than participants. Our goal is to discourage the nonchalance toward participation that has been encouraged by technological developments of our time, and not to pamper professional athletes. The cathode-ray tube has given us an important new medium of communication, but television has brought with it brain washing, deprivation of independent thought, conversational idiocy, and still worse, mass encouragement of mental and physical inactivity. (In this particular context I was delighted with a small sign in the University of Wisconsin library, while visiting there recently. The sign read: "Books are quiet. They do not dissolve into wavy lines or snowstorm effects. They do not pause to deliver commercials. They are three-dimensional, having length, breadth, and depth. They are convenient to handle and completely portable.") We as an institution and the athletic staff in particular must help to reduce the new knowledge of our age to physical and mental health.

We must remember that the "fittest" survive, and that nations must practice as well as give lip service to self-imposed discipline. We must not be guilty of developing a civilization of weaklings, dependent on the ever-increasing luxuries of the electronic age and the psychiatrist's couch. We have an obligation as a "university polarized around science" to make certain that we unconsciously do not become guilty of developing man's mind and knowledge to the point of physical decadence.

Fortunately we do not have to face the dilemma of many college athletic programs described a few years ago by Dr. George L. Cross, President of the University of Oklahoma. "We are working," he said, "to develop a university that the football team can be proud of." The M.I.T. athletic staff is engaged in building an athletic program that will equal the academic standards of the university.

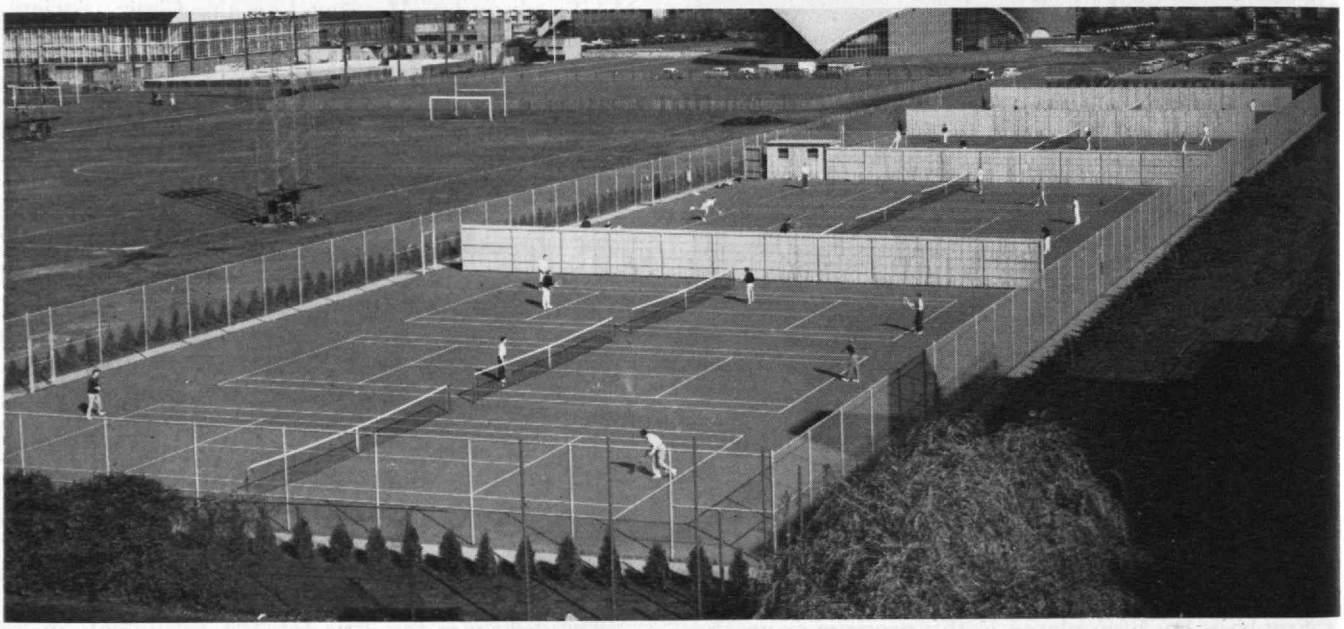
Today men are specialists, speaking languages only a few others understand. The physicist has difficulty understanding the poet and the lawyer is frequently lost in the language of mathematics. We cannot ask that one man assimilate the current rapid expansion of knowledge in all fields. The men we are responsible for educating at M.I.T. will be forced to weigh a variety of expert opinions.

Many men have found an opportunity for sober reflection, and to learn the language of others, while engaged in diversionary activities. Much of this diversion comes under the general heading of recreation. To this end, we feel the M.I.T. student and American university students generally, can profit from participation in purposeful, thought-out programs of physical exercise. The greater the purpose, the more we ensure ourselves against loss of brainwork because of physical or mental illness.

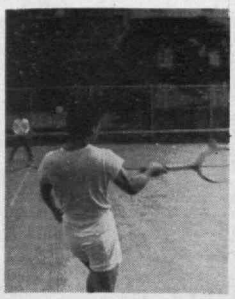
Facilities at M.I.T.

The West Campus facilities have been greatly changed, with the encouragement of Presidents Compton, Killian, and Stratton, and Dr. Stratton pinpointed the objective when he stated recently that "from the maturing influence of campus life should come a wealth of experience and understanding gained through informal relations with faculty and fellow students."

(Concluded on page 50)



The David Flett du Pont Tennis Courts have greatly increased interest in tennis among young men studying at M.I.T.









The Coaches' Review of M.I.T. Athletics

Lacrosse players, skiers, tennis men, and swimmers were victorious in 1958–1959

In the brief reports which follow, M.I.T. coaches review the 1958–1959 athletic season and indicate prospects for the coming season:

Lacrosse Team

The 1959 M.I.T. lacrosse season was the greatest in the school's history. With 11 victories in 12 intercollegiate games, the team won national recognition as coholder with Lehigh of the championship Roy Taylor Division of the U.S. Intercollegiate Lacrosse rankings. Led by Cocaptains Larry C. Boyd, '59, and Charles T. Fitzgerald, Jr., '59, who set a new Tech record of 33 goals for one season, the team lost only to New Hampshire in a 6–4 contest. Coach Martin was chosen to direct the North team in the North-South All-Star game, and Cocaptain Fitzgerald was selected as a player for the North squad and given honorable mention in the All-American selections. — Benjamin R. Martin, Jr., Coach.

Ski Team

The Ski team started the season with skiers of average ability and little racing experience, under a new and "green" coach, and through diligence, enthusiasm, and industry the men molded themselves into a championship team. The team was ably captained by Knut Hauge, '59, managed by Theodore H. Ansbacher, '60, instructed in racing technique by Bard Glenne, G, and coached by Air Force Captain Robert C. Shoemaker. The team worked on physical conditioning two months before the first meet. During Christmas vacation, the men went to Sugarloaf Mountain, Maine, for skiing practice and learned a great deal about racing, skiing in general, and each other. There the group developed the personality and philosophy of a team, which contributed more than any other factor to the team's success.

Our races were held on every other weekend, beginning January 21. The team placed fifth in its first race, then placed second, first, first, first, first, and third in that sequence; and accumulated enough points to win the team championships of the New England Intercollegiate Ski Conference.

Four seniors and three freshmen comprised the "A" team. The captain for next year is Ted Ansbacher, who for the last two years has served as a player-manager. Ted, with his maturity, sound judgment, and experience, will provide strong and wise leadership. The manager for next year is Peter P. Goldstern, '62, who last year was assistant manager. With a nucleus of talented and experienced freshmen to build a team around, M.I.T. can look forward to another successful skiing season. — Capt. Robert C. Shoemaker, U.S.A.F., Coach.

Swimming Team

This year the Swimming Team had an outstanding record in both dual meets and championships. We finished a 10-meet schedule with a 7-3 record, losing to Harvard, Brown, and Springfield, and defeating Bowdoin, Rensselaer Polytechnic, Tufts, Trinity, Wesleyan, Coast Guard, and Worcester Polytechnic. The 46–40 loss to Springfield was a heartbreaker; two second places instead of thirds would have made the difference.

Our season was climaxed by a superb performance in the New England championships, where M.I.T. scored 32 points, finished fourth in the league behind Williams, Brown, and Springfield, and placed men in the finals in the medley relay, backstroke, breaststroke, 440, 400-relay, and the diving. Following the New Englands, we went to the Easterns at Yale, where our medley relay of Theodore N. Divine, '59, Burnell G. West, '60, Thomas J. Ising, '61, and Roger G. Kane, '59, qualified fifth for the finals in the excellent time of 4:07.6, defeating Dartmouth and Cornell, and breaking the existing M.I.T. record of 4.09.3. In the finals, they did not go as well, and finished sixth. In general, it was a most satisfying season. We broke four M.I.T. records: the medley relay, the 100-butterfly (Tom Ising — 1:01.9), the 100-freestyle (John P. Windle, '60 — 54:0), and the diving, when David A. Cahlander, '59, trounced the Harvard divers in their pool, defeating them by 15 points.

We were most fortunate this year in obtaining the services of Ronald Keenhold, former Eastern Intercollegiate Diving Champion, as freshman swimming coach. He has done an outstanding job, and turned out the best freshman swimming team in M.I.T. history. Despite our losses, through graduation, on the varsity level, we should be able to hold our own next year, although we will sorely miss Neil Divine in the backstroke, and Captain Roger Kane, Robert E. Brooker, Jr., '59, and William J. Kossler, Jr., '59, in the sprints. — Charles Batterman, Coach.

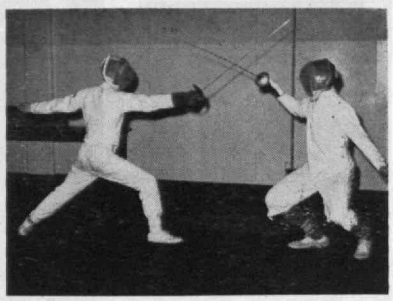
Crew

On the basis of the crew's record at the Championship Regatta of the Eastern Association of Rowing Colleges this year, the season was our best in eight years, and the heavyweight squad as a whole exceeded all previous performances.

Not since 1951 has the M.I.T. Varsity Heavyweight Crew attained "average" performance based on its relative standing in the field of competition in this event. That year we were sixth in a field of 11 and our crew contained many oarsmen from the 1950 National Sprint Champion crew.







This past season we were seventh in a field of 13, defeating, among others, Dartmouth, Princeton, and the Wisconsin crew which went on to win the Intercollegiate Rowing Association regatta.

Also at the E.A.R.C. regatta, our freshmen and junior varsity qualified for the afternoon consolation races by placing second in their heats, defeating Syracuse and Yale, respectively. Thus, for the first time, M.I.T. placed all her crews in the afternoon races. In this feat, we shared honors with four recognized rowing powers — Cornell, Harvard, Pennsylvania, and Navy.

Unfortunately, we were unable to continue this excellent showing at the I.R.A. There we placed 10th in a field of 11, where we have finished in five out of the last eight years.

The lightweight season, although disappointing in race results, produced the largest turnout of oarsmen in many years. Three varsity boats were on the water almost every day this spring. We had the misfortune, however, of meeting the national champion Harvard crew in each of our five races this year. Although our performance improved during the season, we could not catch the "Harvards" who went on to win again both the E.A.R.C. Sprint Championships and Thames Challenge Cup at the Henley Royal Regatta. — Jack H. Frailey, Head Coach.

Tennis Team

The 1959 Tennis Team opened its season with a southern trip, playing matches against Georgetown, Davidson, and North Carolina State, and began the regular season in better condition than we would have otherwise. Our regular season was the best we have had in the three years that I have been at M.I.T. We played 14 matches, winning 10 and losing 4.

The morale of the team remained high despite a 9–0 loss to Harvard in the first match. We defeated Army 6–3, then lost to Brown 6–3. We went on to win 9–0 over Boston University, Bowdoin, and Colby, and 8–1 over the University of Massachusetts. Our next match was against Williams, which we won 5–4. This was the first time that M.I.T. had defeated a Chaffee-coached team in the 20 years that he has been at Williams. We won over Rensselaer Polytechnic 9–0, and then lost a 5–4 decision to Amherst after winning four of the six singles. In our remaining matches, we defeated Wesleyan 6–3, Coast Guard 9–0, and Trinity 6–3, and lost to Dartmouth 9–0.

The New England Intercollegiate Tennis Tournament was held at M.I.T. this year. It had a record entry of 18 colleges and 69 players. Harvard won with 25 points; M.I.T. and Yale tied for second place with 20 points, and Williams placed third with 14 points. — Edward A. Crocker, Coach.

Soccer Team

The 1958 soccer season was a winning one, but a little disappointing. We played a difficult schedule, having four games in the first eight days, and opening with perennially tough Amherst. In addition, there was an unusually high number of injuries.

The highlight of the season was our final game with Dartmouth. We went to Hanover with 13 men and used 12 in the game. Dartmouth had defeated Yale and Amherst, and Amherst had really trounced us early in the season. M.I.T. played a magnificent game, winning 2–1, and displaying the kind of drive and spirit necessary to make up for our lack of numbers. In addition, we had the services of Philip J. Robinson, '61, and Ernesto J. Macaya, '60, both of whom had been sidelined most of the season with separated shoulders. Subin Banharnsupvat, '59, playing his second game of the season, was the playmaker and stabilizer.

We lost a very close one to Harvard, because of the much publicized play of the Aga Khan, the Harvard outside left. With four minutes left in the game, and M.I.T. ahead 3–2, the Aga booted a wind-drifting fluke shot that caromed off the goal post into the goal to tie the score. Harvard then scored again to wrap it up in the last minute of play. M.I.T. won another exciting game against Middlebury, in overtime, 4–2.

Two superior goalies, both former basketball and lacrosse players, were trained this season. They were Phil Robinson and the ubiquitous Joseph R. Skenderian, '61, who shut out Tufts 2–0 in the first game he ever played, and after only one afternoon of practice. Six men were named on the All New England Team, including our Captain-elect Fouad M. Malouf, '60, an oustanding fullback whose play was consistently excellent. We look forward to an improved record next year, and have begun, for the first time, plans for spring practice. Our season record was 5–4–2. — Charles Batterman, Coach.

Varsity Basketball

The team's record of three wins, 13 losses, does not, in any way, show the closeness of all but three games (Harvard, Boston University, and Springfield). The wins were recorded over Bowdoin, Tufts, and Clark. There were one-point losses to the Coast Guard Academy, Trinity, and Middlebury.

Captain Robert J. Polutchko, '59, led the team in every department. Hugh Morrow, 3d, '60, was second to Polutchko in scoring. Lack of height and court experience showed in the games played. With a good group of boys coming up from the frosh, plus reasonable scheduling of games, the record should be better. — John H. Burke, Jr., Coach.

Squash Team

Our season's record was two wins and nine losses. We defeated Adelphi and Connecticut 9–0. However, the team as a whole was greatly improved over the previous season and many of the individual matches were quite close.

Harvard defeated us 7–2, but this was the first time in the three years I have been coaching that we have taken any points from the always strong Harvard team. Loutfy ElSherbiny, '61, a sophomore playing number six, won a close five-game match and F. Monroe Labouisse, Jr., '61, playing number nine, won a close five-game match. Against Navy, the Intercollegiate Team Champions, we won the number one and two matches after being down two games to one in both matches. Farid W. Saad, '61, at number one, and Raul B. Karman, '61, at number two played magnificently in coming from behind to win.

(Continued on page 68)

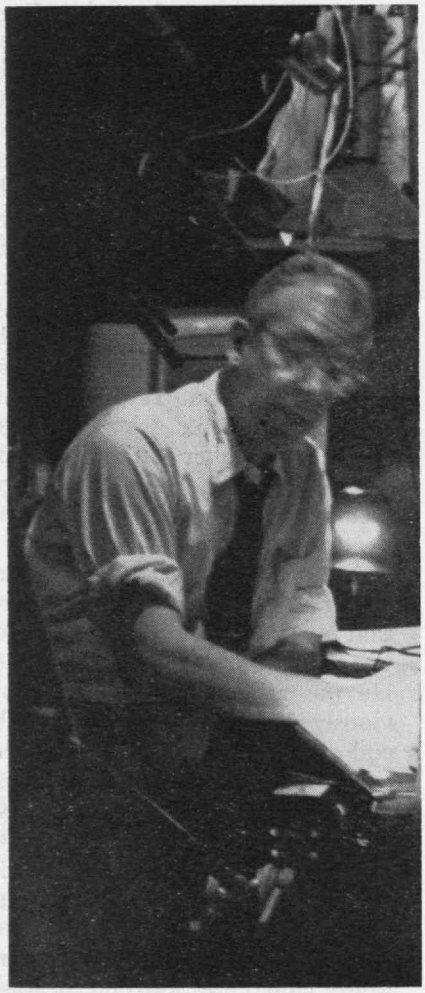
There is a great deal about magnetism, research, war work, industry, and education in Magnets, *a book published this year by Doubleday as part of the Science Study Series prepared under the direction of the Physical Science Study Committee of Educational Services, Inc.*

There is also a great deal about the author, who is Professor of Physics and Associate Dean of the School of Science at M.I.T. This article consists of excerpts from this unusual new book.

Recollections of a Scientist

His family predicted he would be a lawyer . . . he wanted to study chemistry but became a physicist . . . and found life like standing in a waterfall

BY FRANCIS BITTER



Francis Bitter left the Westinghouse Company to join the M.I.T. Faculty in 1934 as a metallurgist, after the late President K. T. Compton had heard him speak at a physical society meeting.

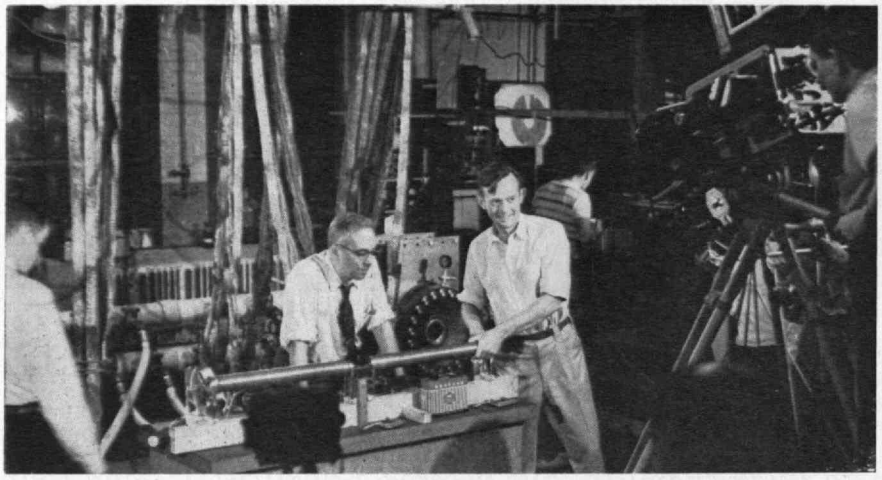
WHAT sort of a child is it who later becomes a physicist? Are there recognizable signs in childhood? I would say not. There is no rule to apply to sort out the scientist from the person who happily will pursue some other vocation. In my case I would say two qualities of character were important, and they have stayed with me through the years. One is imaginativeness. The other is an inquiring mind. Because I seldom accepted the statements or instructions of others, my family used to predict that I would become a lawyer. I would argue interminably, but the sorts of things that I argued about did not in the end center on legal matters. They centered on the description and understanding of the world around me.

One of my earliest recollections in this connection is of Sunday walks in New York City's Central Park, with my father wearing a high hat, my brother and sister and I in our Sunday best. Doubtless we discussed many different things on these sunny Sunday mornings, but I remember particularly the stories of the origin of the world — how rocks and the earth were formed, how living things appeared on the earth, eventually men like ourselves — and how cities grew. My father, a sculptor, was a great reader, and knew a good deal of natural history. His discourses fascinated me.

Life in our New York studio apartment was relatively uneventful. We children were brought up on a rather strict schedule. We learned and used three languages: German with our parents, French with a governess, and English in school. Piano lessons, dancing lessons, a little military drill with the Knickerbocker Greys in the Seventh Regiment Armory, visits to the Museum of Natural History on rainy days, reading "good" books on Sundays — such was the stuff of which our home life was made until, at 12, I went to boarding school.

One of our favorite games was called *enfant perdu* or "lost child." One of us pretended to be lost, destitute, deserted, in a completely hopeless situation, and another of us would find this lost waif. The foundling was adopted and gradually introduced to his or her "new" life. First we would exchange anecdotes about the real or imagined past. Then we would show off the magnificence of a New York elevator apartment, the "new" customs of the family, "new" foods at the table, "new" clothes and toys in our children's closets. The waif would be sent off to a "new" school, and our old friends would become his "new" friends.

The game took several days and,



Professor Bitter appears in one of the films produced by Educational Services, Incorporated, for use in connection with the new high school physics course. This picture was made in his laboratory during its production.

as I remember it, we played it not once but many times. It seems to me now that this may well have been an appropriate exercise for a future scientist. Scientific investigations are started and discoveries are made as the result of a repeated review of well-known facts, attempts to rearrange them, to see them from a new point of view that will excite new interest and reveal new possibilities. And this is just what we were doing in our children's world.

This *enfant perdu* game we played, as I remember it, when we were 9, 10, 11 years old. Another event that stands out in my mind must have happened in my early teens. I was paddling a canoe on a clear night and letting my thoughts roam. Suddenly it came over me, and with something of a shock, that maybe everything I considered most real was pure imagination. The lake, the canoe, the paddle, the stars, the night, the trees, even the feeling of water on my hand, might merely be sensations. Indeed, it might be that I was the only person who existed in the world, that my father and mother, my brother and sister and friends were all just figments of my own imagination — that the feeling of the solid earth when I walked on it was only a feeling. There seemed to be nothing to disprove the hypothesis. On the other hand, what would be the sense of such a thing?

It occurred to me that possibly this was all a matter of education. Perhaps really I was not a young boy alive here on the world, but one of a group of other kinds of beings, perhaps a god or supernatural being of some sort who was merely going through a course of training prepared for him by other supernatural beings. At the time, no one seemed particularly interested in this form of nonsense, but when I studied philosophy in college it was somewhat of a thrill to realize that I was by no means the first person to have considered the possibility.

* * *

At my high school the curriculum included no science whatever. We did have excellent courses in algebra and geometry, which I loved far above anything else. These subjects were easy for me and, if my recollection is right, I was one of the best students in the class. Solving problems by means of equations with unknowns, proving theorems on the basis of postulates — these were exciting, far more interesting than Latin and history, English and geography.

Presently I was ready for college. My grades in general had not been particularly good. On the other hand, I had never had to work particularly hard. Unlike many boys, I was not interested in wiring doorbells and building radios. Such pastimes seemed either boringly trivial or too complicated for me to understand. But when I entered college I had a notion — I remember it vividly — that I wanted to get to the bottom of certain kinds of magic; for example, I wanted to know what a magician did when he poured a liquid of one color into a liquid of another color and transformed it into a liquid of a third color.

My first request on registering as a freshman at the University of Chicago was to be allowed to study chemistry in order to understand this. I was told that physics was a prerequisite for the chemistry courses. The prerequisite opened a very long detour for me. In fact, I never got around to studying the mysterious changing colors of chemical compounds. In all my university days I have had few chemistry courses. For me, it turned out, the physics courses were more satisfying.

* * *

Science and mathematics were easy for me. I did not have to work very hard to get by. My family was not well off, but even in those days, before easy fellowship support, I was able to borrow money to see me through college. One day I saw a notice of a competition for a cash prize to be awarded for excellence in applied mathematics. If I should win that, it would be a most welcome addition to my pocket money. I took the competitive exam, and I still remember the cocky feeling I had when I looked around and saw no one I considered a serious rival. I was very confident. But when the results were announced, it was not I who had won. It was an unknown. Someone who had not become a member of the discussion groups, the bull sessions, the argumentative lunch clubs, just someone who was quiet and smart.

As I now think back on this time, I am reminded of a children's party that my wife gave recently. One boy was somewhat older than the rest. He was rather disdainful and obviously felt superior. Toward the end of the party we had a competition — to see who was best at tossing cards into a hat. It looked easy. The various children tried with negligible success. At last it was the turn of the older boy. He strutted up and obviously expected every card to land in the hat. The first went wild. He looked sheepish. The second went wild. He looked embarrassed. The third, fourth, and fifth he threw in rapid succession, but all missed. With a bewildered look he turned to us and said,

"Hey, what's wrong?"

That was just my feeling when I failed to win the competition — "Hey, what's wrong?" I had not yet learned that singlehearted hard work and devotion and even love were necessary for any *success,* for any real achievement. If these ingredients are not there, one cannot contribute or benefit as one might. It was a good lesson to learn at the very beginning of my career. And there were many more.

* * *

Before starting graduate work I decided to take a year off to study physics more or less independently in Berlin, and a very exciting year it was. I listened to many very famous lecturers: I heard Max Planck, the father of quantum theory, on thermodynamics, which I think he loved more than any other subject; Max von Laue, who had discovered the diffraction of x-rays by crystals and ran the colloquium where every week new discoveries and ideas were discussed; and Albert Einstein. I well remember the colloquium at which Erwin Schrödinger's wave mechanics was introduced. I took the subway home that night, and noticed Einstein coming into the train behind me. Although I had not met him formally, he evidently recognized my face as having been in the audience that afternoon, because he started right in: "What did you think of that? What a marvelous time to be alive!"

And, perhaps for the first time in my life, I worked really hard by myself. I bought the two-volume, paperback *Theory of Electricity and Magnetism,* by one of its founders, Max Abraham, and studied it from cover to cover. Between bouts of study I spent hours thinking and trying to understand what the book *implied* as well as what it said. I made many good friendships among the graduate students and young instructors and research workers. One was Herman Mark, now a professor at Brooklyn Polytechnic Institute, who wrote an article on large molecules for the September, 1957, *Scientific American* that I recommend to you. And there was Leo Szilard of the University of Chicago, who has been a key figure in the initiation of many new ideas, including nuclear reactors and explosions (see Smyth Report on the Manhattan Project). They were some of the people with whom I would discuss what I was learning, people who would share my enthusiasms, correct my mistakes when I got off the track, suggest books, and point out when my bright ideas had been anticipated years before. I was very absorbed.



For many years, Professor Bitter has been developing powerful magnets to study the magnetic nature of matter. This photo, made in 1934, shows him with a small magnet that "swallowed the output" of two big generators.

One day as I was walking along a busy street, a girl passing me said, "*Gutten Abend, Professorchen.*" Well — perhaps if it was as obvious as all that, the "Professorkins" might really have it in him to become a professor.

* * *

Life is in many ways like standing in a waterfall, or so it turned out for me. Either you have the pleasure and the excitement of staying in the waterfall or you get out. I really much prefer to take on the challenge of whatever comes along, provided it really interests me.

So there has been, first of all, the challenge of teaching. How can one be a part of a place full of young people and not concern oneself with what is told to them about the past and the prospects of the future? How can one turn down the privilege of helping to decide what is worth saying and what is not? I could not. So there goes time out of research in the laboratory with graduate students.

And then comes the application of what we have learned. How can one turn down the privilege of going out into industry or government, where what we know is put to work to make things that we want?

Finally, there is the running of the Institute itself. People who have been around a farm all their lives get a certain knack about when to water, when to plow, when to put in fertilizers to make the fields produce. They learn things that are hard to put down in a book of rules. And so it is with professors at a university. More and more, as your hair turns grey, you are asked for advice, you are asked to sit at long meetings that are not nearly as interesting as it used to be to work in the lab. But it is a great satisfaction to see new laboratories being set up, to see new experiments being started, to arrange for the teamwork that is needed in so many modern ventures. It is important to lend a hand in steering the growth of M.I.T. so that it can hope to meet the challenges of a new generation in a new world.

Books

MAN'S WORLD OF SOUND, by John R. Pierce and Edward E. David, Jr.; Doubleday & Co., Inc. *Reviewed by Richard H. Bolt, Professor of Acoustics (Electrical Engineering) at M.I.T.*

IF THE neuter secretary – a machine that types out the letter you dictate – ever becomes a reality, its design will stem from many of the principles described in *Man's World of Sound*. This expertly unified account of speech, hearing, and language communication is at once a review of established facts and, to the imaginative reader, a preview of things to come.

Addressed to the informed layman, and any M.I.T. Alumnus qualifies, this book also gives the specialist in sound a useful picture of territories peripheral to his own. Whether he approaches his specialty as physicist, physiologist, linguist, musician, communication theorist, or electrical engineer, he will see here his own area nicely fitted into the whole map of man's interaction with sound. Topics include the elements of physical sound and vibration; the generation of sound by vocal chords, tongue, lips, and breath; the behavior of the ear in transducing sound energy into neuroelectrical signals; the information-processing functions of nerves and brain. Tonal quality and fidelity are examined, as is the meaning of hi-fi. More detailed descriptions are given of speech analysis and synthesis, of communication efficiency and speech compression, subjects in which the authors are highly expert.

Published in 1958, and thus written somewhat earlier, this volume unavoidably lags the swiftly advancing science at some points. To name just one: the given relation between loudness (sones) and loudness level (phones) does not reflect the latest findings. But the specialist knows that, and the layman or the scientist in another area can have the fun of finding it out himself if he follows some of the clues to relevant literature given in the book.

The Institute's share in advancing this field shows in numerous references to scientists who have studied and done research here. Indeed, the unifying concept of the book – the role of speech and hearing in language as the common mode of human communication – ". . . the authors owe largely to Dr. Morris Halle, associate professor of linguistics." Mr. Pierce is a member of the Class of 1952, and Mr. David, the Class of 1947.

Few books better convey the essence of a science to the "average voter," the man whose informed backing is all important if we, as a democracy, are going to flourish in scientific research as we must. ". . . what we need in this country is science *fans,* just as we need baseball fans, football fans. . . . But to be a good fan one must have a good deal of knowledge beyond his own experience. . . . He must know how difficult it was to do."

Read it, and cheer the next advance in sound.

HOW OLD IS THE EARTH? by Patrick M. Hurley; Doubleday & Co., Inc. *Reviewed by Paul L. Lyons, President of the American Geological Institute and Chief Geophysicist of the Sinclair Oil & Gas Company.*

NO FACET of science is today being investigated with more activity and interest than the dating of rocks using radioactivity. The rewards to come in knowledge of the earth's chronology and in practical usage are great. Our resources come from the earth; the earth we must know. Patrick M. Hurley, '40, in his explanatory book *How Old Is the Earth?* shows a keen appreciation and a rare understanding of the scientific detective work which is now being ingeniously applied to extend our history billions of years into what is now the less dim past. The book should be fascinating and readable to anyone with enough scientific curiosity about the earth to want to know the answer to the title.

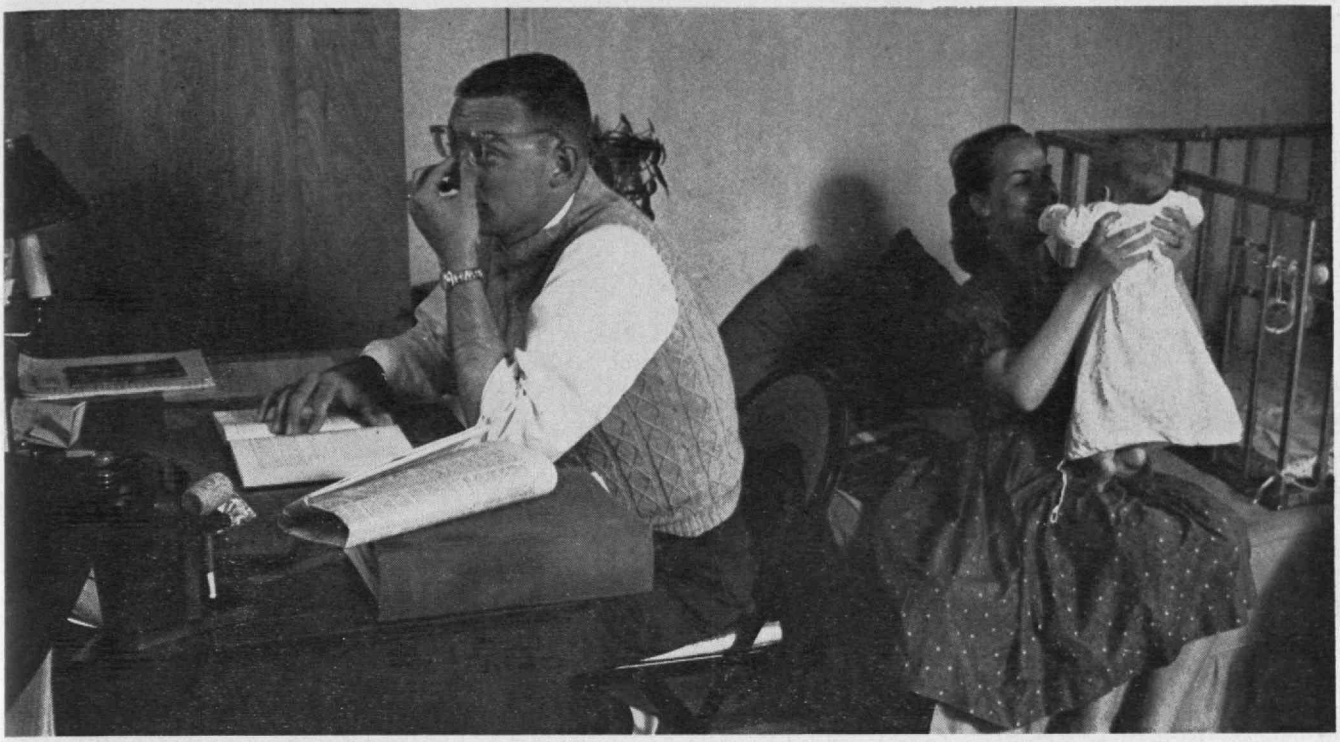
To the scientist, it is a most amazing fact that, as Dr. Hurley puts it, there are little grains of minerals in such rocks as granite, each of which is a minute clock capable of telling the exact time since the formation of the grain. To quote him again, let us not fear radioactivity, but use it to our advantage. His book is a lucid exposition of the uses of radioactive dating methods which have led to a recent tremendous advance in our knowledge of the earth and the universe. The clock minerals have been well selected, and by now many checks are possible on age determinations. Two methods are most generally the most useful, the Sr^{87}/Rb^{87} and the A^{40}/K^{40} ratios. The ratios determine the age of the containing mineral. In each case, the numerator of the ratio is the transformed radiogenic, or daughter, isotope, and the denominator is the radioactive isotope. The only assumption made is that the rate of breakdown of a radioactive substance has remained constant, or that time itself proceeds constantly.

In arriving at the answer to the question in the title, insight is gained into productive offshoots encountered in its pursuit. For example, it is possible to deduce that the radioactive elements are concentrated in the outer two of the seven shells of the earth, and that these elements have supplied most of the energy for the earth's great geologic events. Dr. Hurley, incidentally, thinks of the earth as an oxygen platform, for in truth it is mostly (60 per cent) oxygen. By contrast, the sun is a hydrogen platform, deriving its energy from high-temperature hydrogen reactions.

Ponder this statistic: At this instant the reader is being bombarded with 700,000 damaging radioactive bullets per minute, but he has a body capable of repairing the damage more rapidly than it is produced. He can take heart, too, from a fact well demonstrated by Dr. Hurley, that all the natural and man-made radiations responsible for this bombardment still amount to only one-fiftieth of the A.E.C.'s specified safety limits.

The reader will have some memorable dates to speculate about or benefit from. For example, the oldest rocks, found on all the continents, are nearly 2800 million years old. Do you want to find a gold mine? Curiously, most of the largest gold mines of

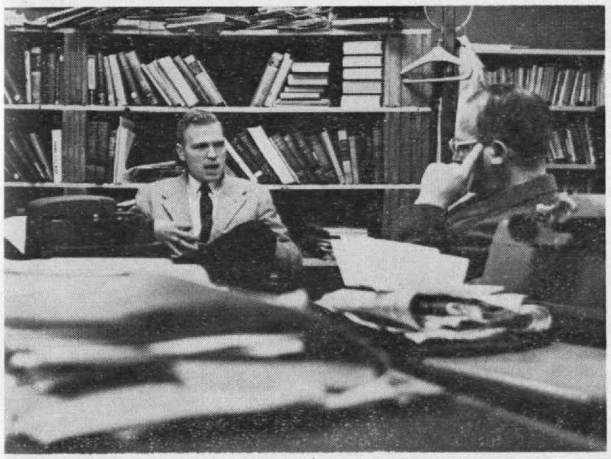
(Continued on page 52)



The married student's problems are varied. While studying for an S.M. in Civil Engineering, the U.S.I.A. reporter found, this young father was also a teaching assistant, an assistant to the lacrosse coach, a free-lance surveyor, and a traveling officer for his fraternity.

As the World Sees Us

The United States Information Agency is sending these and other photos of "Shapers of the Future" to other lands



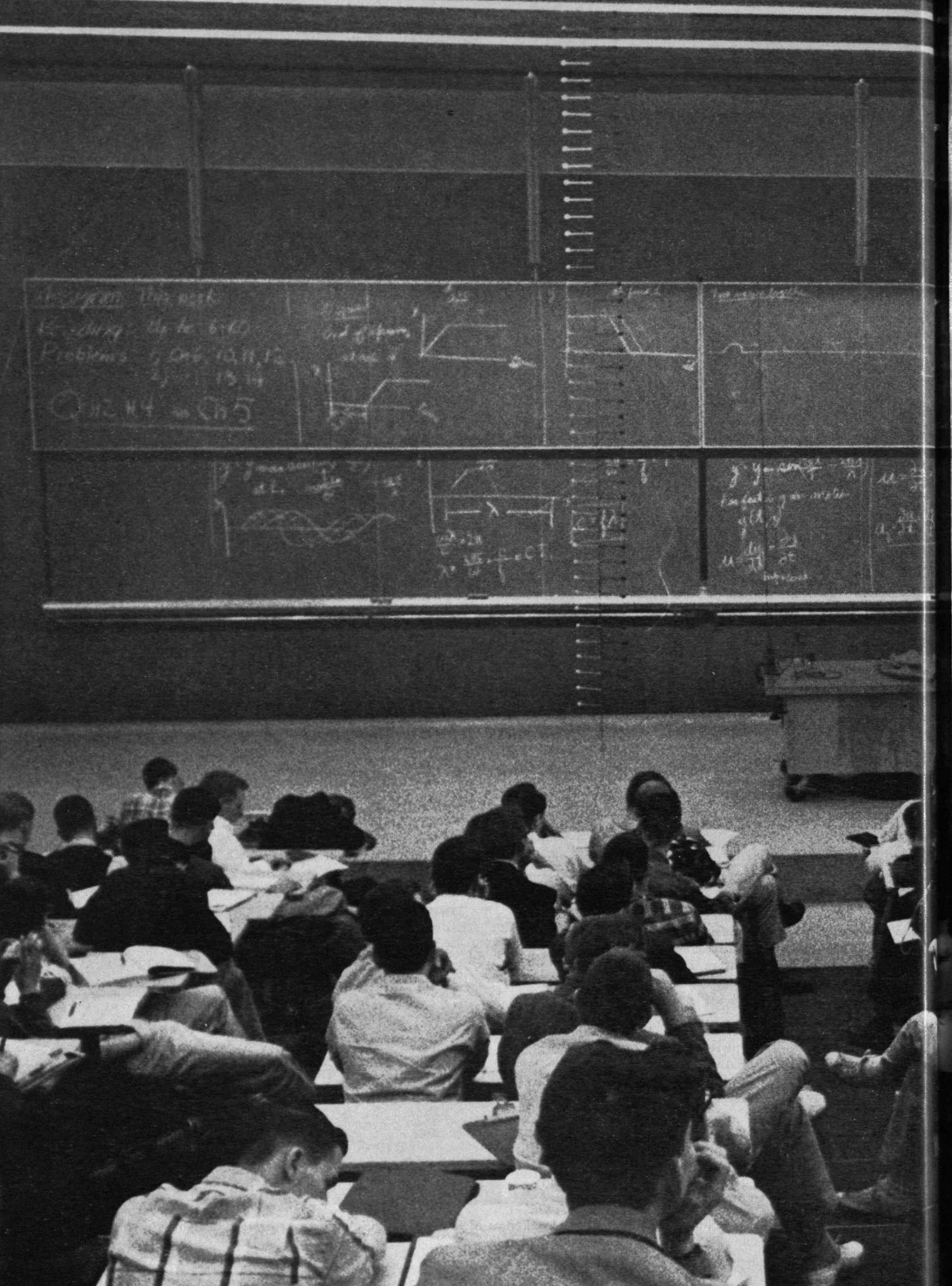
Can strong-minded individuals agree on any one goal? This was the question a graduate student and Professor Walt W. Rostow (right) were considering when the U.S.I.A. photographer and reporter visited the Center for International Studies.

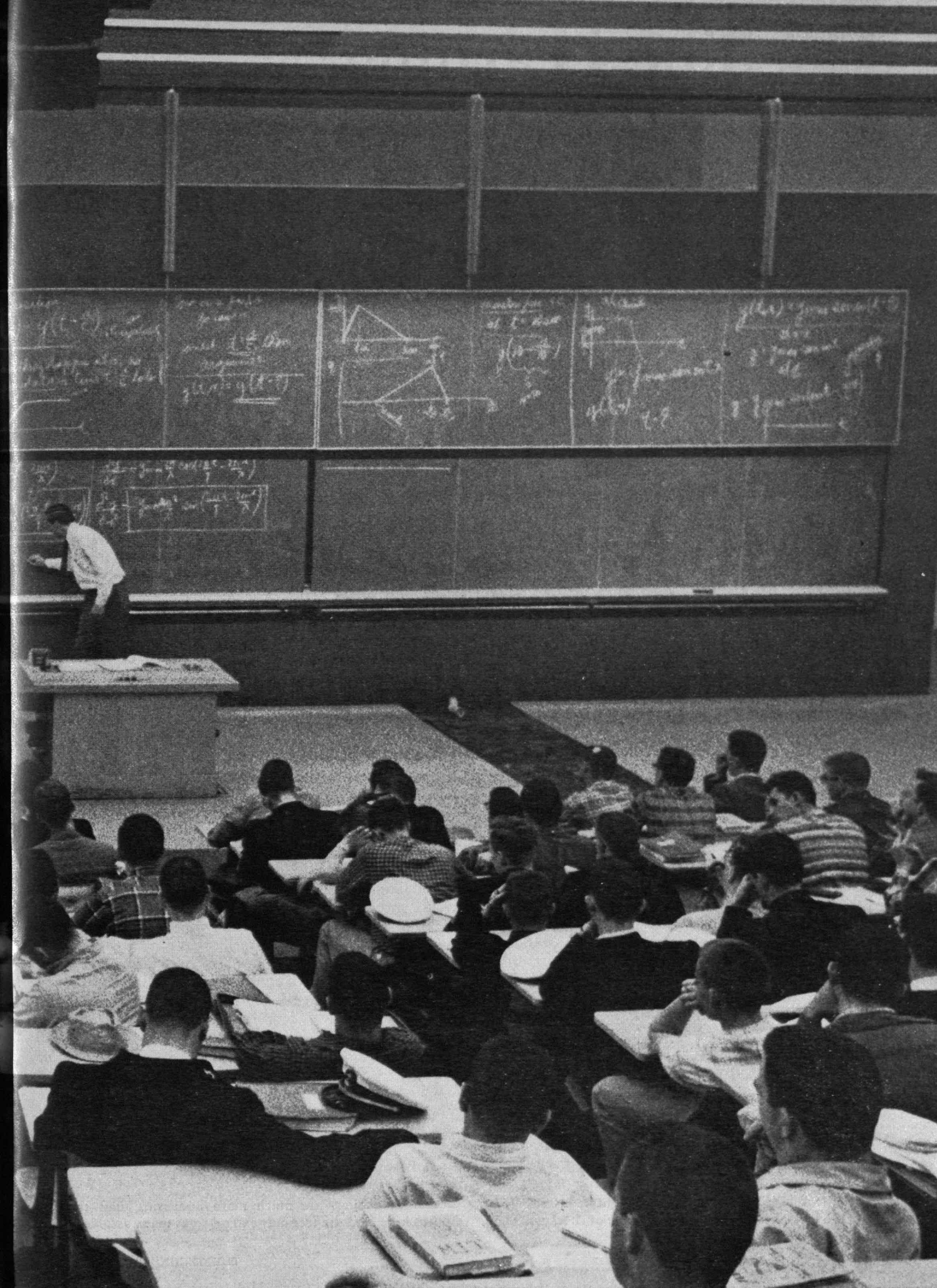
The drugstore on Massachusetts Avenue seemed strangely quiet, for a student rendezvous, to the U.S.I.A. reporter who had visited many other schools before preparing the picture report on M.I.T. that this government agency has sent overseas.

Freshmen and sophomores, 200 at a time, see the blackboards of the Compton Lecture Hall filled with equations, as shown in the photograph on the next two pages. Men in this class also work in laboratories and meet in small discussion groups.



Photos by George Zimbel, taken at M.I.T. for a U.S.I.A. picture story for distribution overseas.





Machine Learning

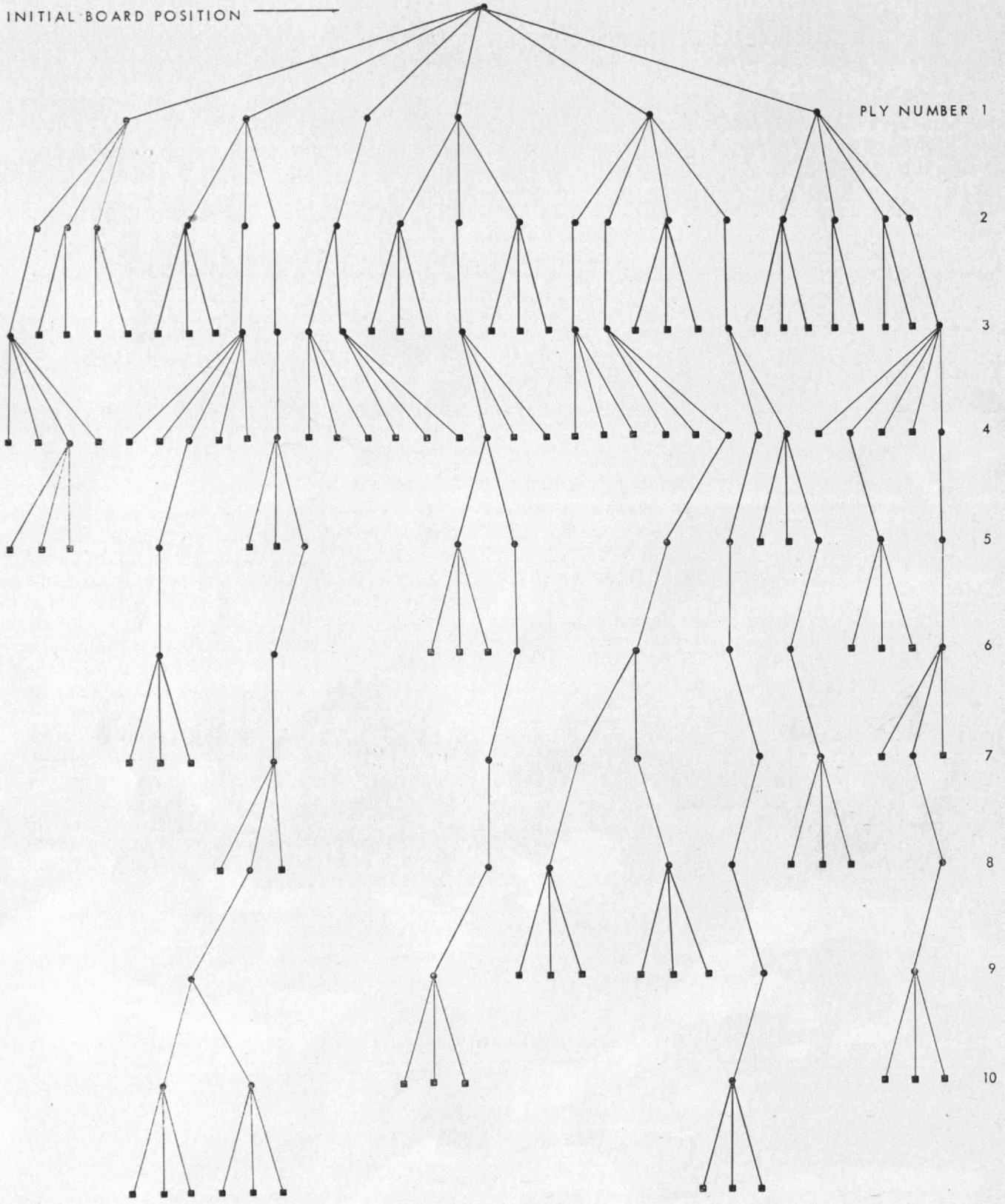


FIGURE 1: A "tree" of moves like this might be investigated during the look-ahead procedure in a game of checkers. The actual branchings are much more numerous than those shown here, and the tree may extend to as many as 20 levels.

Both rote and generalization learning have improved a computer's game of checkers . . . these techniques may be applicable eventually to problems faced in real life

BY ARTHUR L. SAMUEL

LEARNING is now being done by a machine. This statement may arouse all sorts of feelings—from complacent acceptance, perhaps coupled with the remark that "it's about time," to instinctive rejection of the entire idea on the basis that learning involves thinking, and thinking, by definition, is something that only man and the higher animals can do.

The fact remains that a digital computer (the IBM 704) has been programmed to play a competitive game of checkers, and to alter its method of play as a result of its experience in playing the game, and so to become a better and better player.* It is hard to describe this process without using the term *learning*. One can, of course, avoid all anthropomorphic implications by defining *learning* as the simple mechanistic process of profiting from experience. Alternatively, one can maintain that the computer is only achieving an end result which, if it had been achieved by a person, would have been the result of *learning*. The philosophically inclined reader will have to decide for himself whether or not this actually constitutes *learning*. To avoid circumlocutions we will use this term in referring to the computer, but, with the printer's co-operation, we will always write it in italics.

The Basic Checker Program

To understand how a digital computer *learns* to play checkers so well that it can beat the man who wrote the *learning* program, we first have to understand how it can be made to play legal checkers without any *learning*. The computer plays in very much the same way a human player does. This involves: (1) looking ahead several moves along all possible paths, the number of moves varying with the path and being limited by time considerations; (2) evaluating the resulting board positions in terms of material and positional advantages; and then (3) tracing back through the "tree" of anticipated moves for the most likely path consistent with the conflicting aims of the two players and so picking the best possible next move.

The look-ahead process is started by giving the machine a numerical representation of the initial positions of the checkers on the board. The computer then must be capable of computing all possible moves starting from these positions, of making any one of these moves, of computing the new board positions, which would result from the execution of this move, and of repeating this process. Board positions are stored in the machine as a series of *1's* and *0's* in specially assigned storage locations which correspond to the squares on the checkerboard; a *1* representing the presence of a piece on this square, and a *0* representing an unoccupied square. Different storage locations are, of course, used for the two sides and for men and kings. Listings of possible moves are indicated similarly by a series of *1's* in designated storage locations corresponding to the squares occupied by the pieces which can move, again with different storage locations used for moves which proceed in different directions along the checkerboard. The program causes the computer to make the necessary calculations to provide for the transformation from a board representation to a move representation, the selection of one move from the list, and the generation of a new board representation showing conditions after the move. This process is illustrated graphically in Fig. 1.

At the end of the look-ahead procedure, the program must make a numerical evaluation of the resulting board position, using either criteria supplied by the programmer, or criteria which a *learning* routine selects. This process is primarily one of counting; counting the number of pieces on the board, counting the number of squares to which each side can move, etc.

The third process is that of tracing backward through the "tree" of possible moves, the machine acting to maximize its own advantage, while the opponent is assumed to be trying to maximize his advantage and, hence, minimizing the machine's advantage. This logical process, sometimes called "minimaxing" is fairly simple to carry out, and it leads to the choice of one move which is computed to be the best move available to the machine. Figure 2 may help in visualizing this phase of the analysis.

The selected move is communicated to a human opponent (when the computer is not playing against itself) by lights on the console and by a printed record so that the corresponding move can be made on an external checkerboard. The person playing the machine transmits his reply to the computer by switches on the console. The computer verifies the legality of the reply and signals its acceptance by listing the move on the printer. The entire process then is repeated until the computer predicts a sure victory for itself or concedes.

For several years, Arthur L. Samuel, '25, of the IBM Research Center at Yorktown Heights, N.Y., has devoted spare time to teaching a computer to play checkers. He chose checkers because the simplicity of its rules enabled him to concentrate his attention on machine-learning techniques. The IBM 704 now can beat him, but still cannot beat a checker champion.

"I have been pressured to cheat a little, and depart from my rule that the program must never be given any more information than is absolutely necessary," he told The Review's editor while he was working on this article. "It would be relatively easy to store a certain amount of checker lore and make the program play a better game, but I have stuck to my resolution."

The New Yorker *recently called Dr. Samuel "one of the best of the old-fashioned brains in the IBM research department."*

*A. L. Samuel, "Some Studies in Machine Learning Using the Game of Checkers," *IBM Journal of Research and Development*, 3: 211-229, No. 3 (July, 1959). Figures 1, 2, and 3 were reproduced from this publication.

Using this basic program as a tool, two different *learning* techniques have been investigated in some detail. One of these is a simple extension of *rote learning*, in which a record is kept of board-position evaluations as they are made so that they can be referred to in later games. The second technique involves a rudimentary form of *generalization learning* in which the principles used to evaluate board positions are continually altered as a result of experience, and only these modified general principles are saved.

Rote Learning

One might argue that merely saving the results of previous moves would not cause the computer to play better with time, because previous moves, whether good or bad, simply would be repeated. Fortunately, a procedure is available to avoid this. It involves giving the computer the ability to utilize stored information in a different context from that in which it was obtained.

To make this procedure understandable, consider a simple case in which the program looks ahead, perhaps for three moves (called a ply of three, as shown in Figure 3), before attempting to evaluate the resulting board positions. The program then refers to the list of saved board positions. These saved board positions have with them scores which themselves were the result of a minimaxing procedure. Whenever one of these saved board positions is encountered again the program can take advantage of its previous look-ahead and, in effect, look six moves in advance rather than three. To the extent that the backed-up score is better than an equivalent directly computed score, the program will be able to choose a better move than it might otherwise have made. The new initial board position with its six-ply score, in turn, is saved; it may be encountered in a future game and the score backed up by an additional set of three levels. The exploitation of this simple technique causes the program to *learn* and, surprisingly enough, it is a fairly powerful *learning* scheme.

Several additional features were required to produce a satisfactory *learning* program. We have space to discuss but one of these: the one having to do with a sense of direction which must be imparted to the program to cause it to press on toward a win. To illustrate the need for this, consider the special situation of two kings against one, which is a winning combination for practically all variations in piece arrangements. In time, the program can be assumed to have stored all of these board positions, each with a winning score. Then, if such a situation is encountered, there is no basis for a decision, since the program looks ahead along all possible paths and most of these paths lead to winning positions, even though only one of the possible initial moves is along the direct path toward the win, and all the rest are time-wasting. This dilemma is avoided by keeping a record of the "ply value" of each backed-up score and by arranging for the program to choose between board positions having equal scores on the basis of "ply" so that it will press toward a win if it is ahead and adopt delaying tactics if it is behind.

Although this *rote-learning* technique seems simple in concept, it was able to improve the game-playing ability of the computer to a very significant degree in a surprisingly short time – at least for the opening and end-game portions of the play. To improve the mid-game play significantly would have required an exorbitant amount of playing time, in view of computer rental costs, although this time probably would not be as long as that which a checker master spends acquiring his proficiency.

Generalization Learning

An alternate *learning* scheme which required much less storage also has been investigated. This scheme involves the formation of certain generalizations on the basis of the *learning* experience. The program selects a subset of parameters from a list of possible parameters (supplied by the programmer) which are found to be of value in evaluating the desirability of board positions, and assigns numerical coefficients to be used with these to form the terms of an evaluation

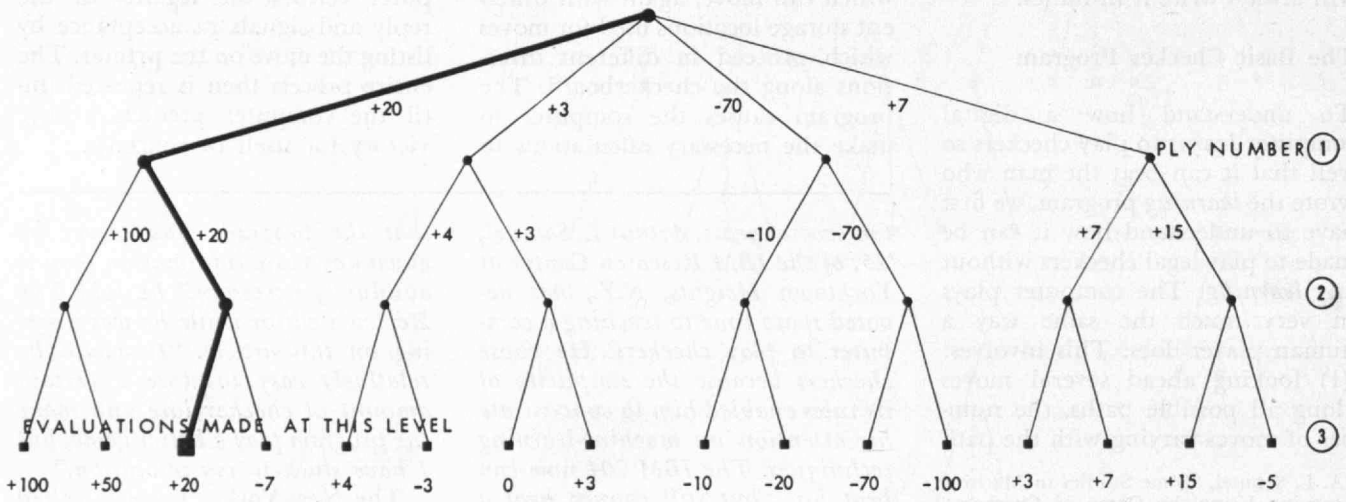


FIGURE 2: Simplified diagram shows how evaluations are backed-up through the "tree" of possible moves in a checker game to arrive at the best next move. The evaluation starts at 3; at 1, the machine chooses the branch with largest score; at 2, the opponent is expected to choose branch with smallest score; at 3, machine chooses one with most positive score.

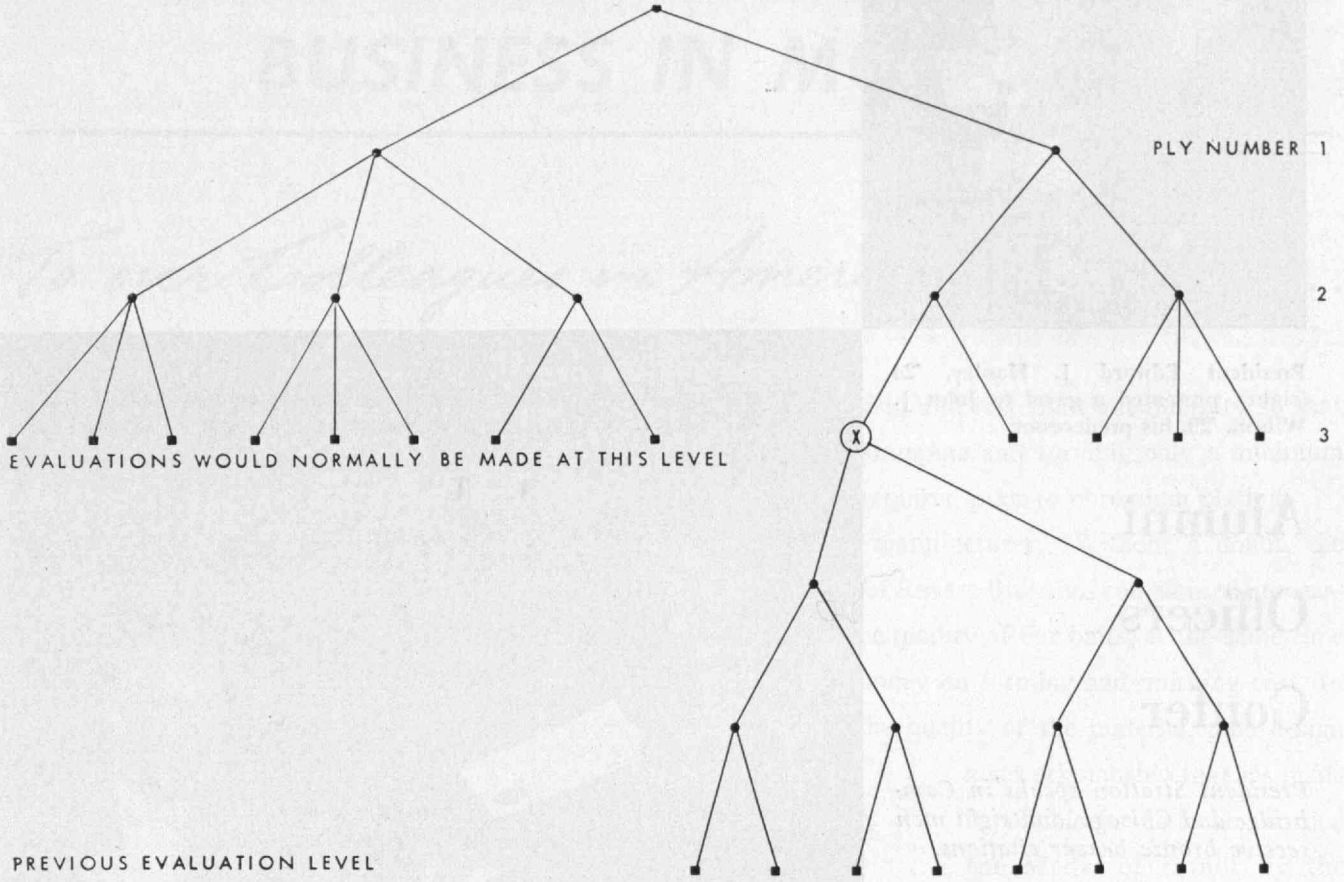


FIGURE 3: Simplified representation of the rote-learning process, in which information saved from a previous checker game is used to increase the effective ply of the backed-up score. The X indicates a typical board position found in the computer's memory with the score from a previous look-ahead. This technique improved the game significantly.

polynomial. This is the polynomial that is used to evaluate board positions at the terminals of the look-ahead process.

If the program is to make changes in its scoring polynomial it must be given some trustworthy criteria for measuring performance. In spite of the apparent bootstrap nature of the operation, it is possible to use this same scoring polynomial to measure progress. When the program finds that the computer is gaining in strength as the result of a series of moves — and this is observed by comparing the scoring polynomial computed for an initial board position with that computed for a board at the end of this series — adjustments are made in the coefficients on the theory that those terms which contributed positively to the initial polynomial should have had larger coefficients, while those which contributed negatively should have had smaller coefficients. Adjustments in the reverse direction are made if the computer appears to be losing ground.

To complete the *learning* process the program is arranged to discard those terms which consistently have the lowest absolute-value coefficients and to replace them with new terms taken from the list supplied by the programmer. With time, then, the program selects the 16 most important parameters from the list and ranks them in importance by assigning numerical values to their coefficients.

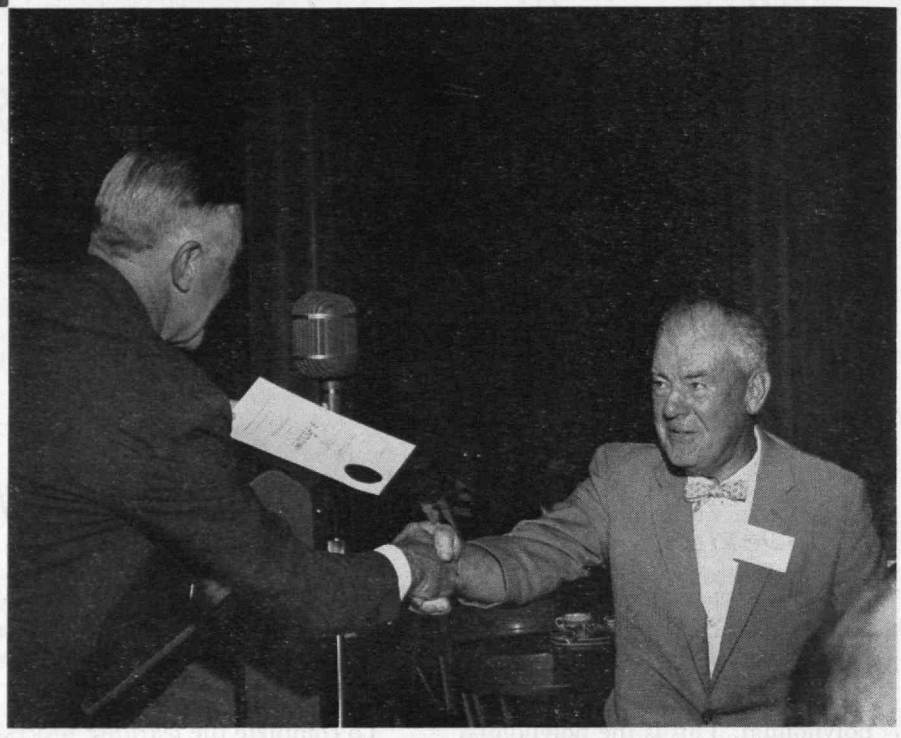
This *generalization-learning* scheme was found to be particularly successful in improving methods of play during the mid-game when, it will be recalled, the *rote-learning* scheme was less useful. It was not nearly so effective during the beginning and end-game play, where circumstances seem to call for highly specialized forms of play which can be *learned* better by rote.

Conclusions

The *learning* techniques studied in these checker experiments require reprogramming for each new application. They are, however, very efficient both in terms of equipment requirements and in terms of speed and, as has been demonstrated, they are capable of realization at the present time. This general approach can be contrasted with a second procedure, sometimes called the Neural-Net Approach, which attempts to induce *learned* behavior into a randomly connected switching net (or its simulation on a digital computer) as a result of a general reward-and-punishment routine. This second approach ultimately may prove to be the more important one, since, in principle, it leads to a device which can *learn* anything, but for the present it is still in the speculative stage. Enough has been done using the first approach to demonstrate that it is now possible to devise *learning* schemes which will greatly outperform the average person, and it eventually may be economically feasible to apply such *learning* schemes to real-life problems — as well as such pastimes as checkers.



President Edward J. Hanley, '24 (right), presented a gavel to John J. Wilson, '29, his predecessor.



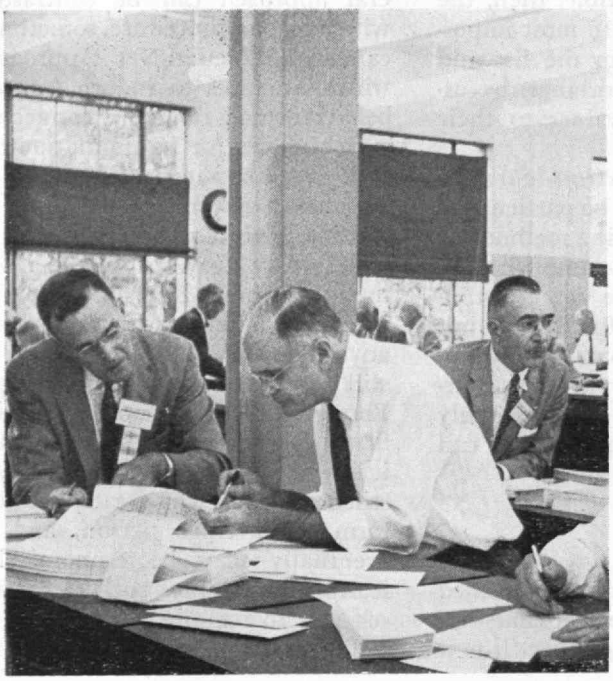
Alumni Officers Confer

President Stratton speaks in Cambridge and Chicago, and eight men receive bronze beaver citations.

How the Institute is "moving in the mid-stream of great events" (the words are President Stratton's) was shown to 350 leaders in Class, Club, Alumni, and Educational Council work who met in Cambridge in September, and 70 more in Chicago in October. At both sessions of this third annual Alumni Officers' Conference, President Stratton spoke on current problems and plans of the Institute, and declared that it must become as well known for research in education as it is for research in other areas.

Edward J. Hanley, '24, President of the Alumni Association, opened both gatherings by reviewing the many

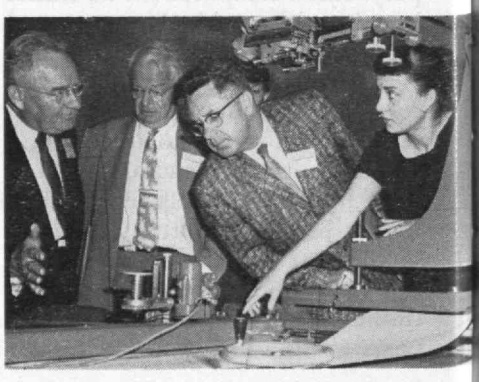
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John Kilduff, '18, was one of eight Alumni to whom bronze beaver citations were given at the third annual conference of Alumni Officers.

More than 15,000 Class Agent letters were signed by Alumni who attended the two-day Cambridge meeting.

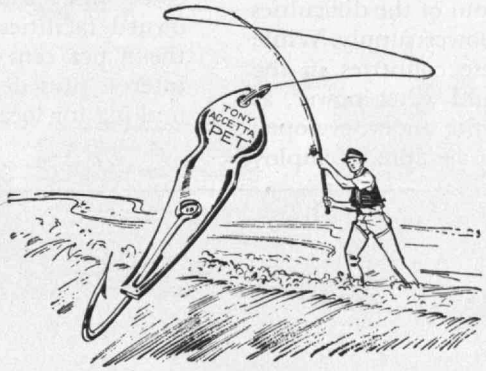
Equipment used to enable a girl to take the place of a chainman interested Alumni who heard lecture by Chas. L. Miller, '51, in Cambridge.



To our Colleagues in American Business ...

Wham! And the fisherman hooks another record-breaker on the lure you see below. Just as that smart angler knew how to successfully fish that "Pet" Spoon bait so did the maker who designed and perfected it know exactly where to go in search of the brass from which to make that lure.

In order to produce the finest quality bait at a competitive price, he knew that he required a metal that could be easily stamped and formed, and of such quality and uniformity of grain structure that only the minimum of finishing would be required prior to the chromium plating of the lure.



Past experience had proved to this artificial bait manufacturer that, of the various commercial metals available, brass was the metal to use for this lure. For brass is easily stamped and formed . . . has just the right "heft" for casting, does not rust and it takes chromium plating as a fish takes to water. But when it came to selecting the exact type of brass that would best fit his exacting requirements, he called on Revere.

The result was a Revere Brass with special grain size and finish, and just the right ductility so that even after stamping and forming only a minimum of work is required prior to chromium plating.

Said the manufacturer, "Without a doubt, the fine quality of Revere Brass has contributed immeasurably to the quality of our baits, at the same time saving us money on forming and finishing cost. In fact, it is the quality of the material, plus design and workmanship that has made it possible for us to be awarded the Medal of Honor by the Sportsman's Club of America for the superiority of design and fish-getting ability of our baits, as well as the National Sportsman's Research Award, which is a real tribute to the design, workmanship and effectiveness of our lures."

The experience of this manufacturer, once more illustrates how, only by working closely with your supplier are you able to realize the highest return per dollar spent. That, too, is why it may very well pay you to let Revere help you "fit the metal to the job." Others have profited by this service, why don't you take advantage of it?

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Executive Offices: **230 Park Avenue, New York 17, N. Y.**

Talk of Our Times

Atomic Power in Other Lands

Robert E. Wilson, '16, spoke at the World Petroleum Congress in New York last summer about "The Probable Impact of Atomic Energy on the World Petroleum Industry." Mr. Wilson is retired Chairman of the Board of the Standard Oil Company (Indiana), a member of the General Advisory Committee to the Atomic Energy Commission and a member of the M.I.T. Corporation.

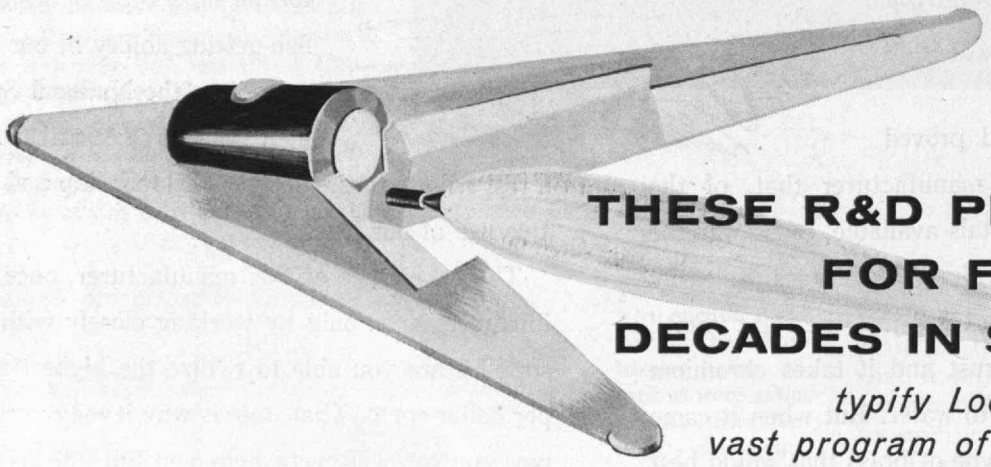
After defining commercial use of atomic energy, and discussing the prospects in this country, particularly as they bear on the future of the oil industry, Mr. Wilson turned to the situation overseas. In this portion of his address, he challenged some widely held ideas. Speaking of the prospects for commercial use of atomic energy in other lands, Mr. Wilson said in part:

POSSIBLY the most important popular misconception is that nuclear power offers great promise to lift the underdeveloped countries quickly out of the difficulties which result from an inadequate power supply. While there are differences between these countries in the cost and availability of oil, gas, and water power, as well as in other factors, in general the underdeveloped countries will be among the *last* to be able to employ nuclear power to good advantage. This is due to a combination of reasons.

In the first place, nuclear power, to come close to being competitive with conventional power, needs to be installed in large units, with high load factors and without having to incur the heavy costs and losses of long-distance transmission. This is, of course, due to the high capital investment involved in nuclear plants, and the fact that this cost per unit of output drops rather rapidly with increasing size. A country like England, which has a well-developed, high-density power transmission grid, can much more readily integrate into the system a number of large units to handle the base load, and operate them with a load factor of 75 to 80 per cent. Most of the underdeveloped countries, on the other hand, really need power plants of relatively modest size at scattered locations, and can scarcely expect to have a high load factor for many years.

Furthermore, even if nuclear power were close to being competitive under the circumstances prevailing in these countries, the high investment cost — at least twice that of conventional plants of similar size — means that underdeveloped countries would have better use for their limited capital in other fields and would prefer to pay slightly higher direct operating costs. They could not justify, even for government-owned facilities, as low total charges for capital as the 9 per cent which England currently figures for interest plus depreciation — apparently they include nothing for local taxes or insurance.

(Concluded on page 50)



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New programs under development at Lockheed's California Division are planned to solve America's future exploration projects into space. The new multimillion-dollar Research Center in nearby San Gabriel mountains is further evidence of Lockheed's determination to support and supplement its already extensive research and development activities.

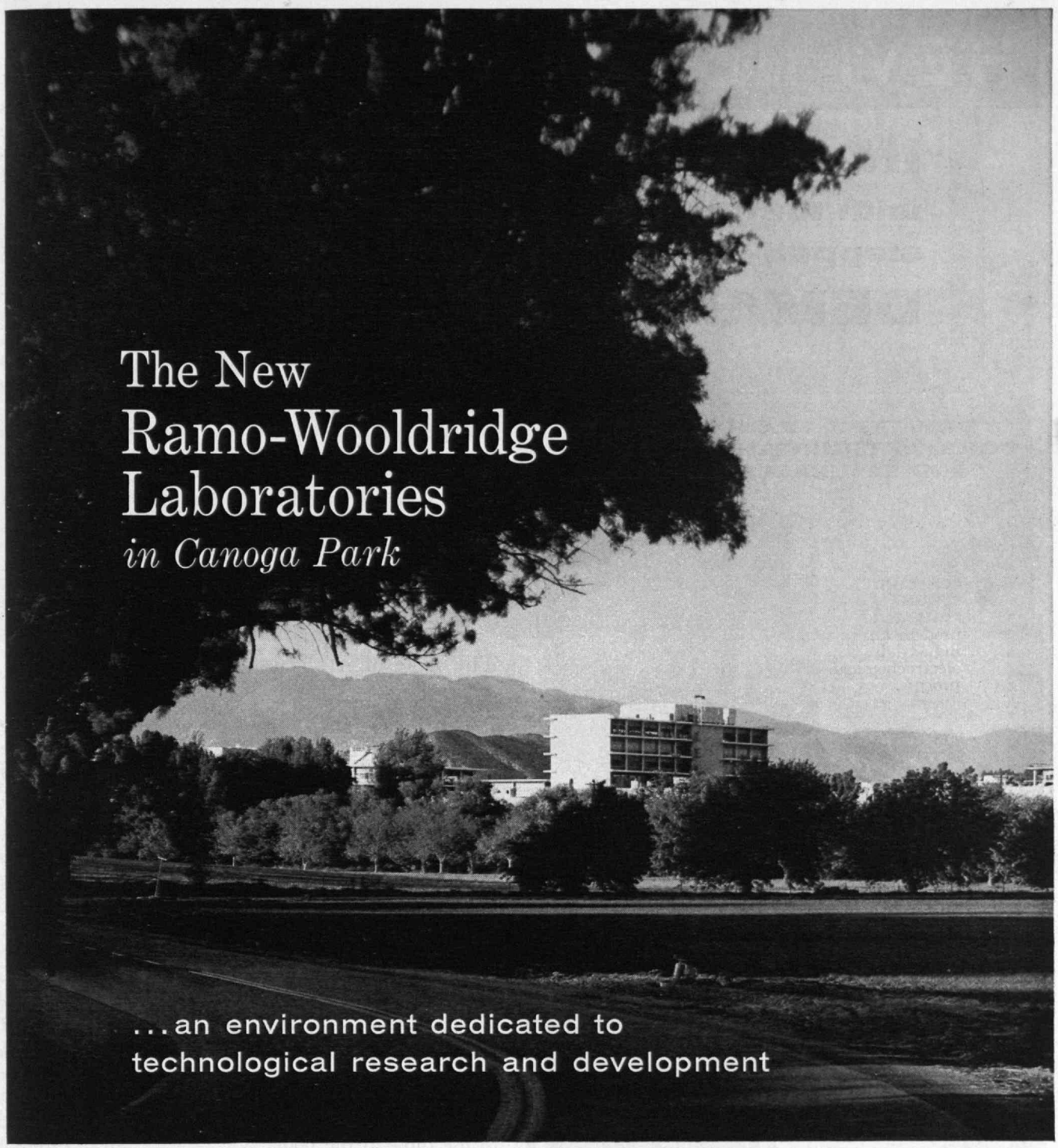
Important forward-looking research and development projects now being conducted at Lockheed in Burbank are: Space Transports; Infrared System studies; Vertical Take-off and Landing Vehicles; Helicopters and Supersonic Transports.

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The ninety-acre landscaped site, with modern buildings grouped around a central mall, contributes to the academic environment necessary for creative work. The new Laboratories will be the West Coast headquarters of Thompson Ramo Wooldridge Inc. as well as house the Ramo-Wooldridge division of TRW.

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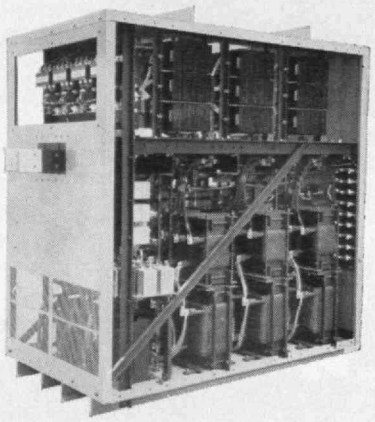
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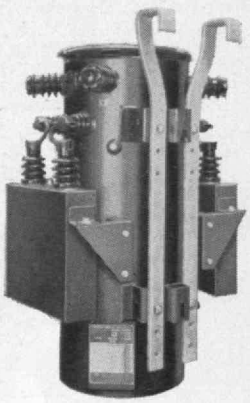
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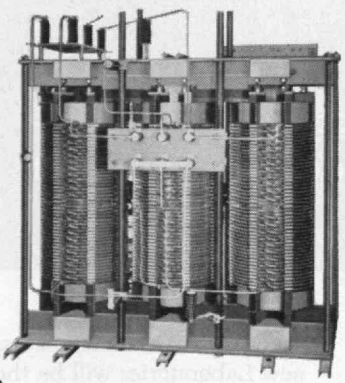
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Talk of Our Times

(Concluded from page 48)

Another difficulty facing underdeveloped countries is the absence of domestic plants for the manufacture and maintenance of the large amount of special equipment and supplies needed by nuclear plants, and of facilities for reworking spent fuel elements, handling waste disposal, etc. Still another would be the difficulty in many countries of getting the trained personnel necessary for safe operation.

Sad as it may seem, economics would therefore indicate that nuclear power will probably make much more rapid progress in industrialized countries with high power requirements, and would of itself tend to *widen* the gap between countries, rather than serve as the "great equalizer" which some have hoped. . .

In general, it would seem likely that in England and possibly one or two other countries of western Europe atomic power plants will become competitive some five years earlier than in the United States, but that they will not replace any existing plants of reasonable size and age. In the rest of Europe, I would expect that the time when atomic power would become competitive would be similar to that for the higher-cost areas in the United States.

The Role of Athletics

(Concluded from page 32)

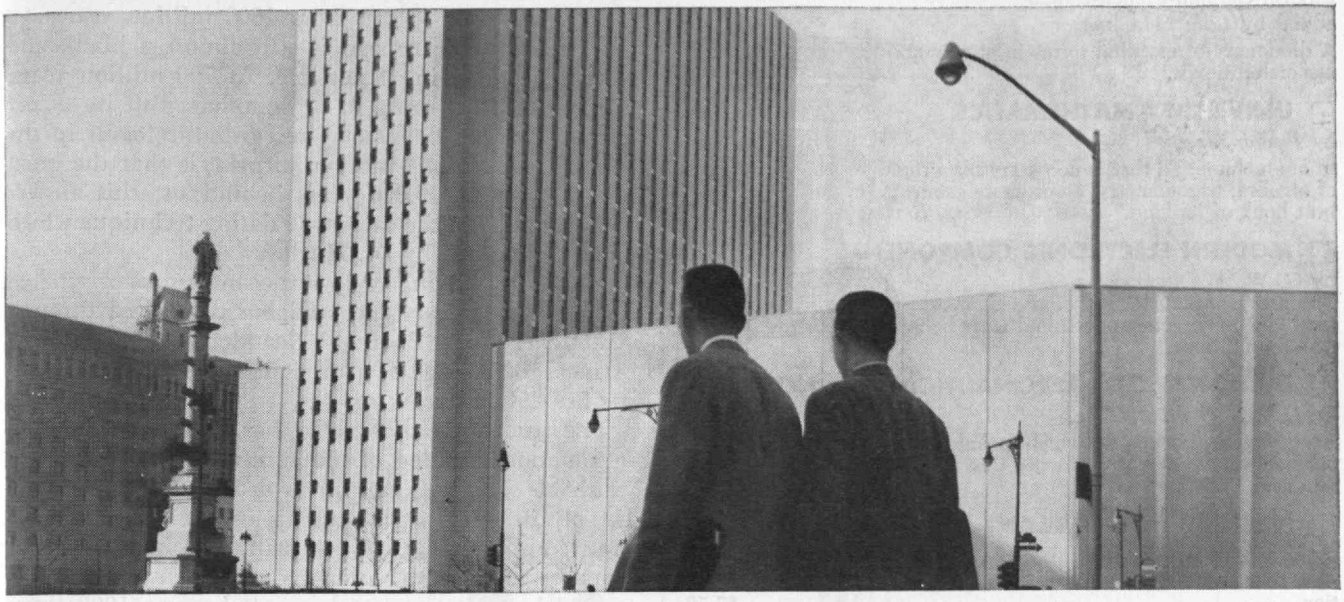
The Armory already has become a popular gathering place for the Institute Community during the winter months. The skating rink, built in 1954, has brought Faculty and students together increasingly, and enhanced interest in physical education. The new 10-lap cinder track around the inside perimeter of the Rockwell Cage will preclude the necessity for track team enthusiasts to compete in 25-degree temperatures during the indoor season. The expansion of the playing fields will permit more teams to engage in intramural competition.

The Alumni Pool has continued to be a center of interest for both the Faculty and students. This summer it was used by sons and daughters of the Faculty and Alumni, and new programs in elementary diving and life-saving have been provided to meet student requests. The new squash courts in the Du Pont Athletic Center will be a partial answer to the crowd waiting to use those at the pool.

"This whole extracurricular part of a student's life must be integrated into the plan of education itself," President Stratton has said, and this will be facilitated by the new center. Completed now, despite 10 strikes in the course of its construction, these new quarters have enabled the Athletic Department to begin a new period of development this year.

I hope that we will continue to encourage each student at M.I.T. to explore the depths of his individual ability in everything he undertakes. Our goal is to effectively refute the "cult of easiness" in which a large segment of our society has nurtured the idols of security, conformity, and comfort, both in the classrooms and on the athletic fields. By such an effort, I feel, M.I.T. can help to fulfill the obligations of providing leadership throughout the world.

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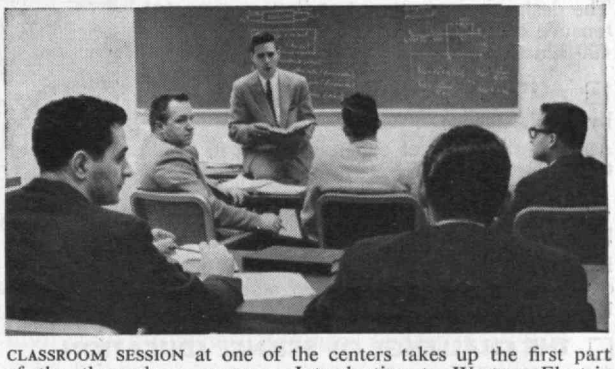
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Books

(Continued from page 38)

the world occur in rocks this old. The gold came before life; the oldest fossil life, from the radioactive age of the enclosing rocks, is 1600 million years old. Oddly, the time record from 1600 million years ago to 700 million years ago is still almost a blank and should be filled in, if possible. At 700 million years, the fossil record starts to be complete. But in 85 per cent of the earth's history, recognizable fossils in the rocks do not exist. Another surprise is that the great ice age is only 10,000 years behind us; this answer is the product of the carbon-14 dating technique which is well explained by Dr. Hurley.

What about man? Well, Pithecanthropus originated about 200,000 years ago, and has descended through 4000 generations. Poor old Neanderthal man became extinct about 50,000 years ago. Man-apes started to use fire 250,000 years ago.

The study of radioactivity has, of course, resulted in an understanding of the sun, now known to be a youthful star working on hydrogen. The ultimate age of the earth is bound up in the future of the sun; it appears that the sun will, in some billions of years, be reduced to working on the heavier elements created by that time, and it will become 1000 times more luminous and have a radius 100 times greater than at present, all of which will be hard on the earth. What of its age? The sun cannot be older than the galaxy universe of which it is a member. That age, by extrapolation backwards of the well known lead and uranium association, is about 5 to 7 billion years.

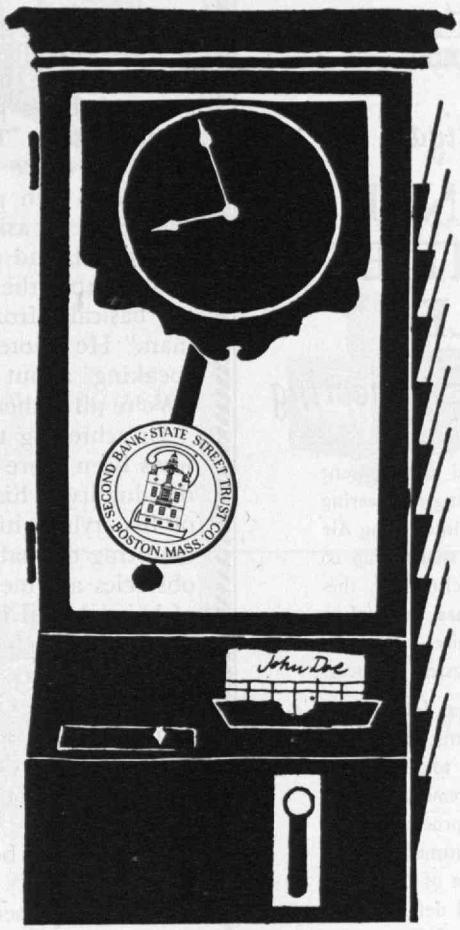
Finally, just how old is the earth? In the last century, Lord Kelvin, neglecting radioactivity, estimated from thermodynamics that this terrestrial ball is only 24 million years old. Dr. Hurley explains that radioactivity, the true source of the heat flow used by Kelvin, indicates its age to be 4.5 billion years. Everyone with a sense of history should read the account of the fascinating research behind the derivation of this value.

As Dr. Hurley concludes: "How majestic are these broad reaches of time! . . . the true reward is not to be found in whether our calculations are correct, give or take a few million years; it lies in the discoveries, in the advancement of human knowledge and philosophy that are the inevitable products of scientific search for law in nature."

WHAT MAKES A SCIENTIST, by George Waltz; Doubleday & Co., Inc. *Reviewed by William Speer, Associate Dean for Student Counseling at M.I.T.*

THE body of this book consists of a dozen biographical sketches of living scientists. At least four of them are familiar names to M.I.T. Alumni: Dr. Bush ['16], Professors Zacharias and Shannon ['40], and Josiah Macy, Jr., '49. Among the others are two Nobel Prize winners, Dr. Selman A. Waksman of Rutgers and Dr. Edward M. Purcell of Harvard, and a half dozen other men now famous for their work in various fields. Even the most unscientific reader cannot fail to see

(Continued on page 54)



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Books

(Continued from page 52)

how the sciences no longer can be considered as separate areas, and will appreciate why Dr. Macy refers to himself as a mathematical biophysicist.

The title is somewhat misleading, if the reader is expecting an inquiry into the mysteries of creative thinking. In the introductory chapter the author states that his purpose is to dispel the image of a scientist as a "long-haired individual in unpressed clothes, with a far-away, absent-minded look in his eyes, and with perhaps a beard covering a rumpled collar and an askew tie—a man who is uninteresting, underpaid, and unhappy." In its place he would like to substitute the image of men who are "little different basically from the average successful professional man." He quotes a nuclear scientist who said, when speaking about himself and his fellow scientists, "We're all rather revoltingly normal."

In achieving this purpose, the author has in some ways been more successful than he intended. The individuality of his subjects is blurred by the uniformity of his style, which chronicles events rather than attempting to analyze or interpret them. Difficulties and obstacles are mentioned, but the reader is in danger of being lulled into an acceptance of some automatic element in each man's rise to eminence. In these days when excellence is in danger of becoming a catchword in educational circles, we need to be reminded of the thought expressed by an early Greek poet when he said: "Before the gates of excellence the gods have placed sweat. Long is the road thereto and rough and steep."

Mr. Waltz's book will be of greatest value to the boy in his early teens, and to the father looking for a birthday present who finds little to choose from in the field of scientific biography. There are good classical biographies of some of the giants of earlier generations, but few, if any, of men now living. This book begins to fill the gap. Many, if not all, the men in it can be included in a boy's gallery of heroes without fear that they will suffer by comparison with the more conventional objects of hero worship. This is the book's very real contribution.

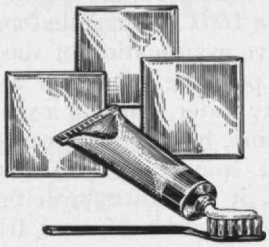
It includes eight pages of photographs.

ECHOES OF BATS AND MEN, by Donald R. Griffin; Doubleday & Co., Inc. *Reviewed by Paul Cohen, '35, of the Sperry Gyroscope Company.*

DR. GRIFFIN, who is professor of zoology at Harvard, has been a pioneer in the determination of how animals, particularly bats, find their food and move through the dark by listening to the echoes of the sophisticated sounds which they themselves produce. The field is important not only for its own intrinsic interest, but also because of the light it sheds on man's efforts to find his way by sound in the ocean depths, and on means of guidance for the blind.

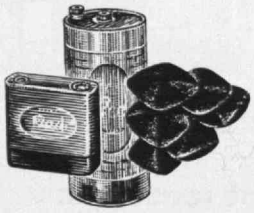
Although the book, as one of the Science Study Series, is a text capable of serving the needs of high school students, its simplicity disguises an encyclo-

(Concluded on page 56)



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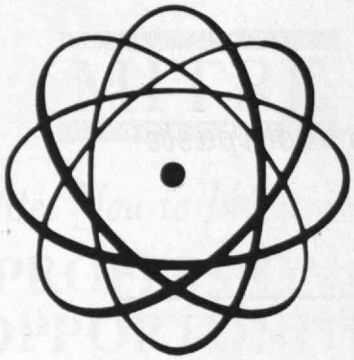
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(Concluded from page 54)

pedic background. Griffin's earlier book, *Listening in the Dark,* is suggested as a more formal and quantitative examination of the subject.

A porpoise, caged in a small pond of dark and murky water, can find a six-inch fish with a succession of short, high-pitched pulses, which to a human observer sound like the creaking of a door. What's more, it can distinguish this little fish, which is not a good reflector of sound, from the multitude of echoes coming from the bottom of the pond, its banks, the boat in which the observers sat, and the entire background of rocks and aquatic plants. Porpoises, incidentally, can hear sounds as high as 150,000 cycles per second. Humans, in their prime early years, can do little better than 15,000 cycles.

Bats also operate at frequencies far above human bearing. In fact, for most species, 99.9 per cent of the sound energy they emit is ultrasonic, which is why their method of echo location remained undetermined until Griffin borrowed some electronic apparatus from a Harvard physics laboratory. Many species of bats habitually capture flying insects smaller than a gnat with a much more refined "sonar" system than that by which destroyers attempt to track submarines. These bats emit pulses possessing the most advanced features known to our radar and sonar experts (frequency modulation, variable repetition rate, variable pulse length) and then proceed to process the returning echo with techniques which human engineers cannot understand, let alone equal. This with a brain the size of the eraser on a pencil.

By the extreme gain of their echo-location system, bats can almost defy the laws of physics, being able to locate and avoid fine wires much smaller in diameter than a wave length of the sound they are emitting. Perhaps a still more amazing feat is the ability of some bats, flying just above a smooth water surface, to detect completely submerged minnows. Because sound is, to a small fraction of 1 per cent, reflected when striking such a sharp interface as a water-air surface, the amount of energy making the round trips from bat to fish and back to bat, is, Dr. Griffin estimates, barely one part in a million* of the emitted chirp. But the bats get their fish.

*It has been suggested that when the fish's air bladder is less than half a wave length from the surface, the bat's problem may be somewhat easier than this ratio implies.

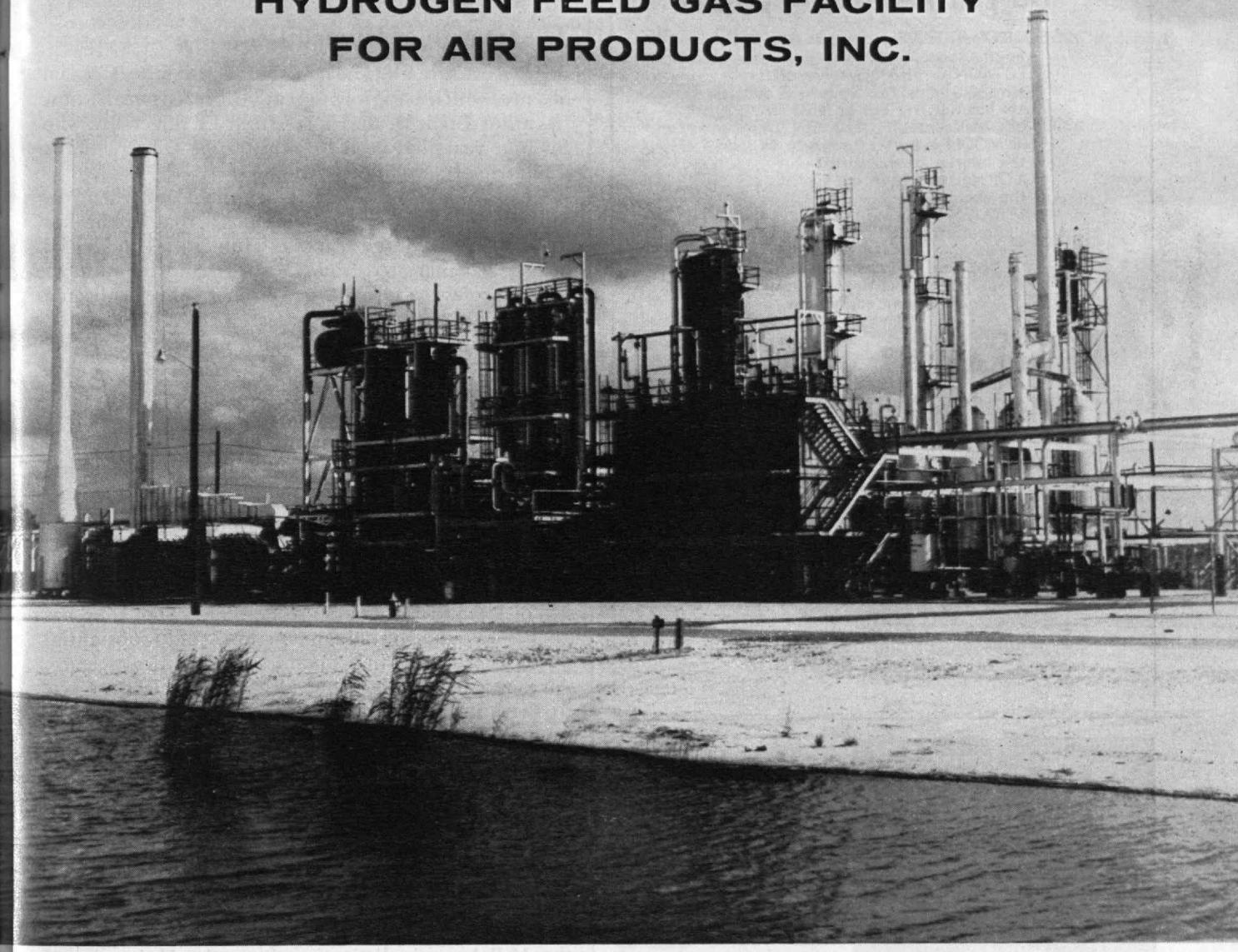
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Trend of Affairs

(Concluded from page 25)

The Growth of Humanities

THE Institute's School of Humanities and Social Science, which has grown greatly in recent years, now has an Assistant Dean. He is Arthur L. Singer, Jr., who for four years has been Administrative Officer for the Center for International Studies.

Dean John E. Burchard, '23, pointed out when Mr. Singer's appointment was announced that in the last decade the staff of the School of Humanities and Social Science has increased from 75 to 107, and the number of full professors from 10 to 31. There also has been a substantial increase in the range of the school's interests, both in subjects offered and in research conducted.

"To economics and industrial relations, we have added political science, psychology and certain kinds of sociology," Dean Burchard went on. "We have increased the work given in history, literature and music, and have added substantially to that in philosophy and the history of science.

"To the fairly elementary work in modern languages we have added courses in the literature, a section of the core curriculum taught exclusively in French, a new emphasis on the Russian language, and the teaching of semantics and linguistics. The school now has about 150 undergraduate majors and substantial doctoral programs in economics and political science. An increasing number of M.I.T. students elect subjects in the humanities over and above the eight subjects required for a degree."

Mr. Singer, who is 30 years old, will assist Dean Burchard in a variety of ways, with emphasis on matters relating to the social sciences and the Dean's responsibilities as chairman of the board of The Technology Press. He also will continue as a member of the senior staff of the Center for International Studies.

He was graduated from Williams College in 1950 with an A.B. *cum laude* in economics, and received the M.B.A. with distinction from the University of Michigan. He was assistant to the executive officer of the *U.S.S. Franklin D. Roosevelt,* and combat information center officer on the *U.S.S. Worcester,* while in the Navy, and was briefly an assistant in business research at the University of Michigan in 1952.

Tunnel-Diode Puzzle Solved

JEROME J. TIEMANN, '53, is one of the men at the General Electric Research Laboratory in Schenectady who are credited with explaining puzzling wiggles in the performance curves of tunnel diodes. These are very new first cousins to transistors, although they operate on a different principle. The explanation of their performance may accelerate development of tunnel diodes for use in high-speed computers, television sets, space vehicles, and communication equipment.

A tunnel diode is smaller than a transistor, simpler in structure, and less affected by radiation. It can be used as an amplifier, a generator of radio-frequency power, or a switching device. In the latter role, the tunnel diode has functioned 10 to 100 times as fast as the fastest transistor.

HOWARD HUGHES DOCTORAL FELLOWSHIPS. If you are interested in studies leading to a doctor's degree in physics or engineering, you are invited to apply for one of approximately 10 new awards in the 1960 Howard Hughes Doctoral Fellowship Program.

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Each Howard Hughes Doctoral Fellowship provides approximately $8,000 annually. Of this amount $1,800 is for tuition, books, fees, thesis and research expenses. The remainder is the award of a cash stipend and salary earned by the fellow.

Hughes conducts extensive research and development in the scientific and engineering fields. Typical programs include: network analysis and synthesis, semiconductor materials, plasma electronics, communications, computing... and solid state physics, atomic and nuclear physics, tests of the general theory of relativity, chemistry, physical chemistry and metallurgy, information theory, mechanics of structures, electro-mechanical propulsion systems, and systems analysis.

Howard Hughes Doctoral Fellowships are open to outstanding students qualified for admission to graduate standing. A master's degree, or equivalent graduate work, is considered very desirable before beginning the Fellowship Program.

The classified nature of work at Hughes makes eligibility for security clearance a requirement for nearly every applicant.

Closing date for applications: January 15, 1960.

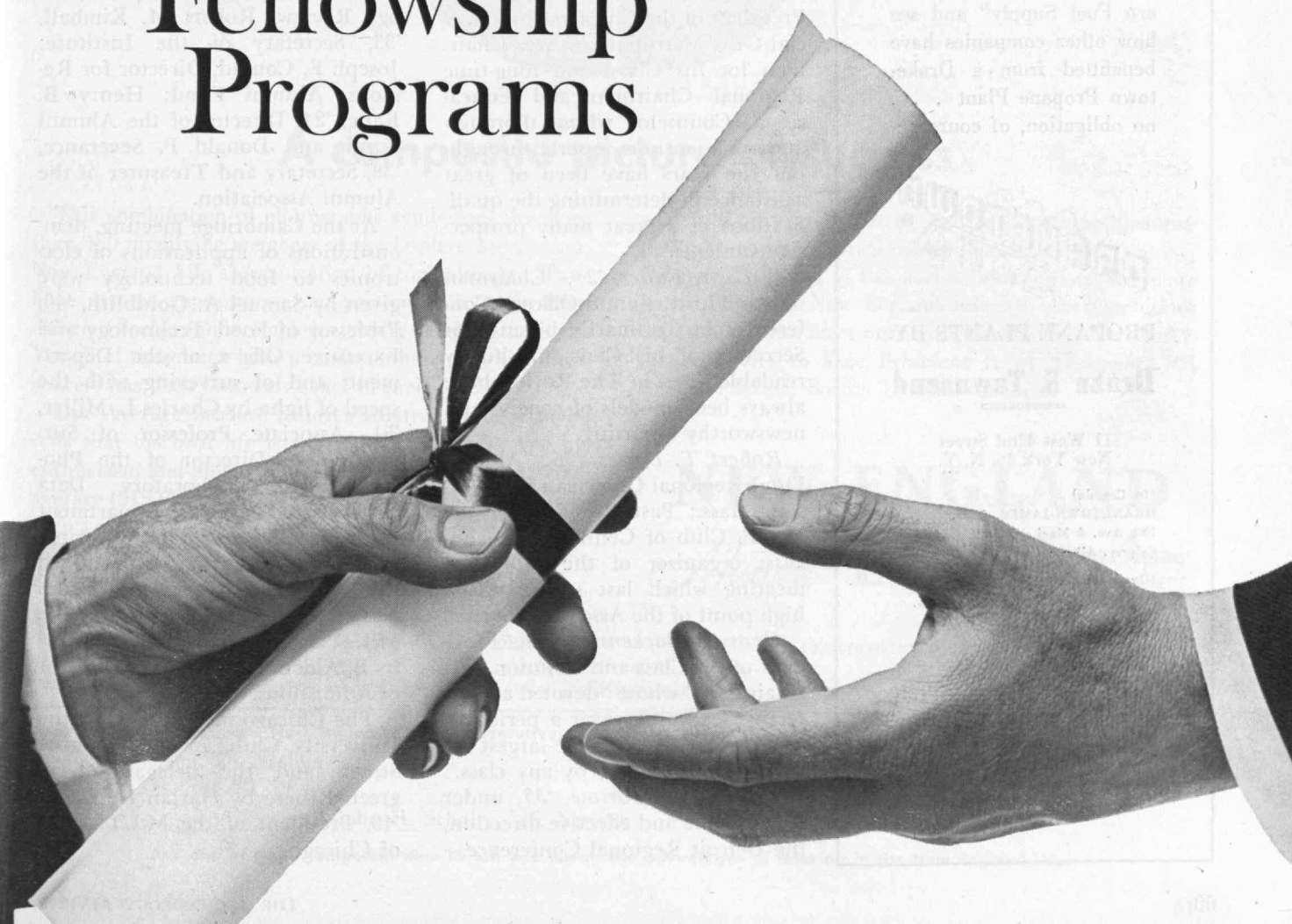
How to apply: Write Dr. C. N. Warfield, Scientific Education, Hughes Aircraft Company, Culver City, California.

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Alumni Officers Confer

(Concluded from page 46)

ways in which Alumni are assisting the Institute. Edwin D. Ryer, '20, chairman of the Alumni Fund Board, reported that the Fund last year totaled $575,000 and had more than 15,000 contributors.

Bronze beaver citations were given to:

Thomas K. Meloy, '17, whose "personal and untiring efforts were, in large part, responsible for the success of the Washington Regional Conference of March, 1958."

John W. Kilduff, '18, "President of his Class and Chairman of the Newburyport Region in the Alumni Fund which for the past two years, he had led to a perfect 100 per cent participation."

Eugene R. Smoley, '19, "Secretary of his Class; Past President of the M.I.T. Club of New York; Past Regional Chairman for Scarsdale in the Alumni Fund; but primarily because, as Reunion Gift Chairman, he led his Class in making the first 40-year gift a very substantial one."

Philip L. Coleman, '23, "Past President of the Chicago Club; Special Gifts Metropolitan Area Chairman for his Class; and long-time Regional Chairman and Educational Counselor whose thorough and conscientious reports throughout the years have been of great assistance in determining the qualifications of a great many prospective students."

F. Leroy Foster, '25, "Chairman of this Third Alumni Officers' Conference; but primarily because, as Secretary of his Class, his highly readable notes in The Review have always been models of concise and newsworthy reporting."

Robert T. Dawes, '26, "Alumni Fund Regional Chairman for Hudson, Mass.; Past President of the M.I.T. Club of Central Massachusetts; organizer of the Worcester meeting which last spring was a high point of the Association year."

Henry B. Backenstoss, '34, "President of his Class and Reunion Gift Chairman," whose "devoted and effective leadership over a period of five years resulted in the largest 25-year gift ever made by any class."

Thomas F. Morrow, '35, under whose "able and effective direction, the Detroit Regional Conference — 14th in a notable and distinguished series — took place in January, 1959."

President Hanley presented a gavel to his predecessor in office, John J. Wilson, '29.

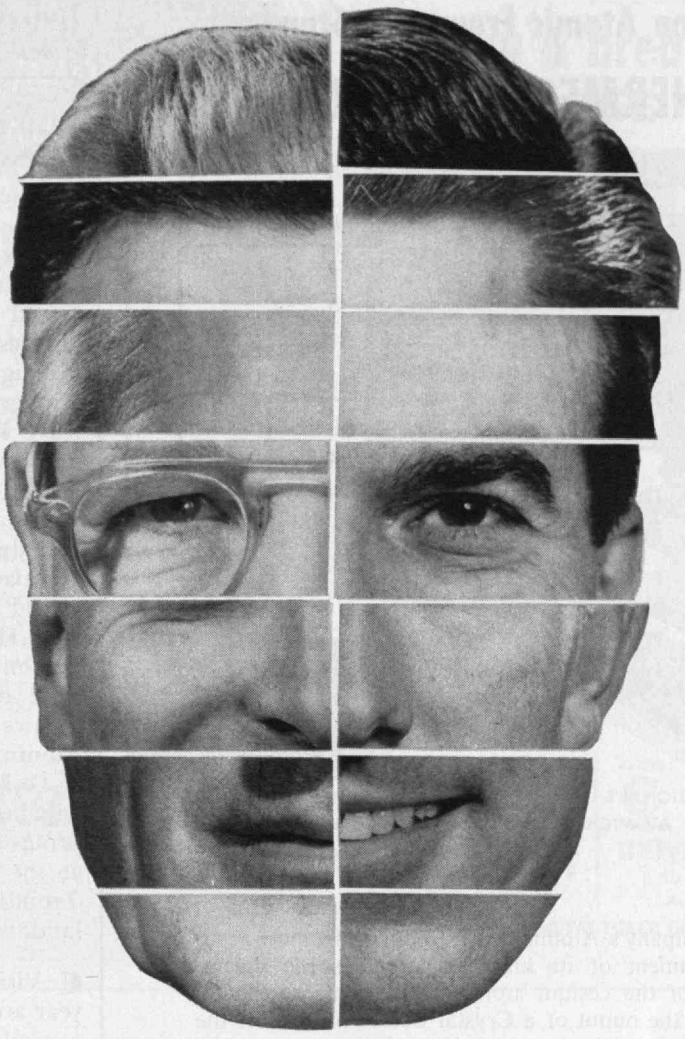
As chairman of the conference, F. Leroy Foster, '25, Director of the Division of Sponsored Research, presided at general sessions in both Cambridge and Chicago. Moderators at other sessions were (in Cambridge): Lewis D. Fykse, '41, Educational Council; D. Reid Weedon, Jr., '41, Class Agents; Dwight C. Arnold, '27, Special Gifts Solicitation; Frederick J. Kolb, Jr., '38, Class and Club Officers; John W. Kilduff, '18, Regional Solicitors; (and in Chicago) Philip L. Coleman, '23, Educational Council; Robert C. Meissner, '43, Special Gifts Solicitation; Robert S. Faurot, '44, Class and Club Officers; and Robert L. Silberman, '48, Regional Solicitors.

Speakers included: Frederick G. Lehmann, '51, Assistant Secretary of the Alumni Association; D. Hugh Darden, Executive Secretary of the Educational Council; Volta W. Torrey, Editor of The Technology Review; Robert M. Kimball, '33, Secretary of the Institute; Joseph E. Conrad, Director for Regions, Alumni Fund; Henry B. Kane, '24, Director of the Alumni Fund; and Donald P. Severance, '38, Secretary and Treasurer of the Alumni Association.

At the Cambridge meeting, demonstrations of applications of electronics to food technology were given by Samuel A. Goldblith, '40, Professor of Food Technology and Executive Officer of the Department; and of surveying with the speed of light, by Charles L. Miller, '51, Associate Professor of Surveying and Director of the Photogrammetry Laboratory Data Engineering Division, Department of Civil and Sanitary Engineering.

President Stratton entertained the conference delegates at his home, and a luncheon at the M.I.T. Faculty Club was addressed by B. Alden Thresher, '20, Director of Admissions.

The Chicago meeting was at the University Club, 76 East Monroe Street, and the delegates were greeted there by Harlan H. Davis, '40, President of the M.I.T. Club of Chicago.



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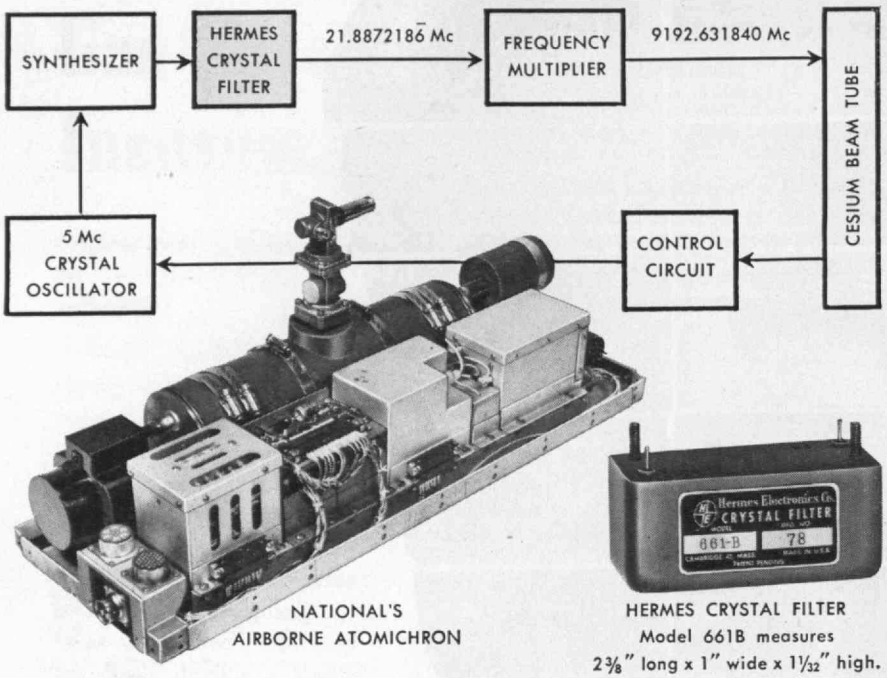
*Based on the 275 returns received from a survey of the entire qualifying membership.

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Charles E. Crawford, '31, Phoenix
Herbert L. Neitlich, '49, Boston
Arthur C. Kenison, '19, Boston
John H. Schafer, '25, Newark

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Individuals Noteworthy

(Continued from page 10)

1959-1960 Visiting Professors

VISITING professors for the current academic year at the Institute are:

Carl T. Devine, in the School of Industrial Management, who received the M.B.A. and Ph.D. degrees from the University of Michigan, is now a professor at the University of Florida, and was on leave last year as professor at the University of California in Berkeley.

Donald J. White, in the School of Industrial Management, who was graduated from Boston College, received his M.A. and Ph.D. degrees from Harvard, and is on leave from Boston College, where he is associate dean and professor of economics in the College of Business Administration.

Terkel Rosenqvist, in the Department of Metallurgy, who is professor of extractive metallurgy at the Institute of Technology in Trondheim, Norway, his native land.

¶ Visiting associate professors this year are from England and Canada as well as the United States:

Roger J. Blin-Stoyle, in the Department of Physics, who is on leave from Oxford University in England, where he is a senior research officer in theoretical physics and a Fellow of Wadham College.

Murray C. Kemp, in the Department of Economics and Social Science, who is on leave from McGill University in Montreal, Canada.

Jerome Y. Lettvin, '47, in the Department of Biology, who is a consulting psychiatrist at the Boston Psychopathic Hospital and has been a member of the M.I.T. Research Laboratory of Electronics since 1951.

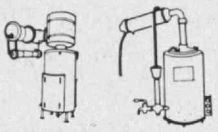
William W. Peterson, in the Department of Electrical Engineering, who is on leave from the University of Florida.

¶ A visiting assistant professor is James G. Clunie, in the Department of Mathematics, who is on leave from the Imperial College, University of London, in England.

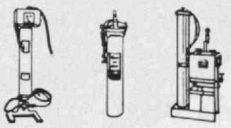
(Continued on page 64)

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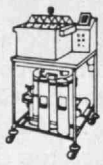
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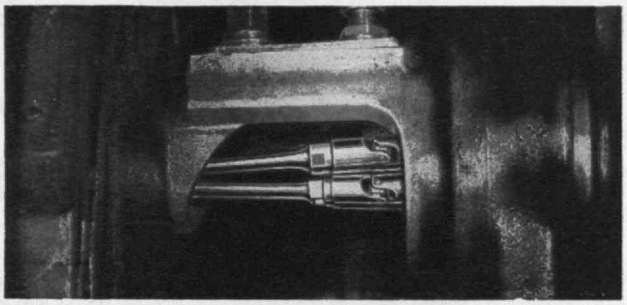
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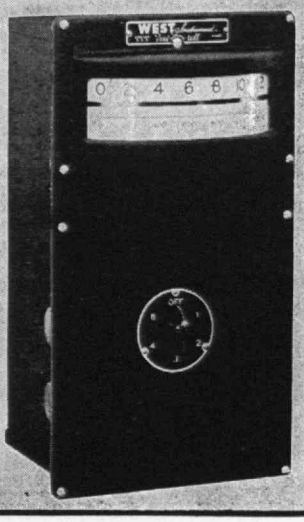
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Individuals Noteworthy

(Continued from page 62)

New Positions

MEN who have stepped into new positions in recent months include:

Louis S. Cates, '02, as a Director, Niagara Fire Insurance Company . . . *Rear Admiral Luis de Florez, '11,* as a Director, Douglas Aircraft Company . . . *George F. Halfacre, '18,* as Vice-president in Charge of Manufacturing, New Jersey Zinc Company . . . *Edwin D. Ryer, '20,* as a Director, Merchants Co-operative Bank, of Boston . . . *Zembry P. Giddens, '21,* as Executive Vice-president, of Dynamics Corporation of America . . . *Joseph L. Gillson, '21,* as President of the American Institute of Mining, Metallurgical, and Petroleum Engineers;

Harold E. Koch, '22, as Executive Vice-president, Basic Products Corporation, Milwaukee, Wis. . . . *William H. Lang, '22,* as a Director, Great Northern Railway . . . *H. W. McCurdy, '22,* as a Director, Lockheed Aircraft Corporation, and as Chairman, Puget Sound Bridge and Dredging Company;

Miles N. Clair, '23, as Vice-president, American Society for Testing Materials . . . *Cecil H. Green, '23,* as Trustee, Woods Hole Oceanographic Institution . . . *Gordon Y. Billard, '24,* as a general partner, Carreau and Company, New York . . . *John S. Davey, '24,* as Vice-president in Charge of Sales, Russell, Burdsall and Ward Bolt and Nut Company, Port Chester, N. Y. . . . *Carl F. Muckenhoupt, '24,* as Director of Research, Northeastern University;

F. Leroy Foster, '25, as a Director, Engineering College Research Council, American Society for Engineering Education . . . *James A. Drain, '26,* as Vice-president, H. K. Porter Company, Inc. . . . *James R. Killian, Jr., '26,* as a Director, General Motors Corporation, and as a Director, International Business Machines Corporation . . . *James G. Walker, '26,* as a Staff Manager, Johns-Manville Corporation;

Emerson W. Conlon, '29, as Assistant Director of Aeronautical and Space Research, National Aeronautics and Space Administration . . . *Lawrence C. Hamlin, '29,* as Regional Vice-president in Charge of Far East Operations, Standard-Vacuum Oil Company . . . *Joseph L. Speyer, '29,* as Secretary, Boston chapter, American Society of Chartered Life Underwriters;

Sidney McCuskey, '30, as Chairman, Department of Astronomy, Case Institute of Technology . . . *James B. Fisk, '31,* as a Trustee, John Simon Guggenheim Memorial Foundation, and as Chairman, Board of Directors, Newark College of Engineering Research Foundation . . . *Howard L. Richardson, '31,* as Executive Vice-president, The Stanley Works of New Britain, Conn., and as a Director, Taylor Instrument Companies, Rochester, N.Y.;

Arthur M. Marshall, '32, as a Member, Committee on Appointment, Interstate Commerce Commission Practitioners . . . *Paul F. Genachte, '33,* as a Director, Nuclear Science and Engineering Corporation, Pittsburgh, Pa. . . . *Francis T. Hall, Jr., '33,* as Head, Department of General Engineering, College of Engineering and Architecture, Pennsylvania State University;

(Concluded on page 66)



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Individuals Noteworthy

(Concluded from page 64)

Charles A. Cogan, '34, as Assistant Manager, Operations Division, Manufacturing Department, Standard Oil Company (Indiana) . . . *Jacob J. Jaeger, '34,* as President, Pratt and Whitney Division, Niles-Bement-Pond Company . . . *Frederick C. Johnson, '34,* as Vice-president and General Manager, Scale Division, Fairbanks, Morse & Company . . . *H. Neal Karr, '34,* as Head, Special Products Division, The Singer Manufacturing Company . . . *Robert K. Moore, Jr., '34,* as Superintendent of Lines and Substations, Pennsylvania Power and Light Company;

Isaac H. Munro, '35, as Vice-president, Marketing, Allied Chemical Corporation . . . *George S. Schairer, '35,* as Vice-president in Charge of Research and Development, Boeing Airplane Company . . . *Randolph M. Wilkens, '35,* as Sales Planning Manager, Industrial Products Division, Hewitt-Robins, Inc.;

William P. Kennedy, '36, as Assistant Director of Market Research, Lockheed Aircraft Corporation . . . *William M. Harcum, '37,* as General Manager, Eastern Research Center, Robertshaw-Fulton Controls Company . . . *Sidney Levine, '37,* as East Coast editor of *Ceramic Age;*

Robert V. D. Campbell, '38, as Director of Research, Paoli Laboratory, Burroughs Corporation . . . *Homer R. Oldfield, Jr., '38,* as Vice-president, Raytheon Manufacturing Company . . . *Reinhardt Schumann, Jr., '38,* as Head, School of Metallurgical Engineering, Purdue University;

John H. Howard, '39, as Manager, Paoli Laboratory, Burroughs Corporation . . . *Ernest R. Kaswell, '39,* as President, The Fiber Society, Inc. . . . *Lawrence M. Lyons, '39,* as Production Manager, Utility Industrial Division, Burndy Corporation . . . *Eugene Oliver, '39,* as General Foreman, Process Division, Humble Oil and Refining Company, Baytown, Texas . . . *A. Lindsay Thomson, '39,* as President and Treasurer, Terry Steam Turbine Company;

Richard C. Brown, '40, as Assistant Manager, Oakland Plant, American Can Company . . . *Samuel A. Goldblith, '40,* as a Director, Gorton's of Gloucester, Inc. . . . *Regis J. Harrington, '40,* as City Planner, Medford, Mass. . . . *Frank W. Lippard, '40,* as Assistant Manager, Quality Control Division, Philip Carey Manufacturing Company, Cincinnati, Ohio;

Walter J. Kreske, '41, as President, Massachusetts Society of Professional Engineers . . . *Kenneth G. McKay, '41,* as Vice-president in Charge of Systems Engineering, Bell Telephone Laboratories . . . *Nathaniel Rochester, '41,* as Manager of Experimental Machines Research, Mohansic Laboratory, International Business Machines Corporation . . . *Henry C. Vogel, '41,* as a Section Head, Project Development Department, Merck and Company, Inc. . . . *Teddy F. Walkowicz, '41,* as Director, Allied Research Associates, Inc. . . . *Albert F. Clear, Jr., '42,* as an associate, Booz, Allen and Hamilton . . . *Harvey I. Kram, '42,* as Vice-president — Operations, Revlon . . . *John W. McNall, '42* as Director of Research, Lamp Division, Westinghouse Electric Corporation.

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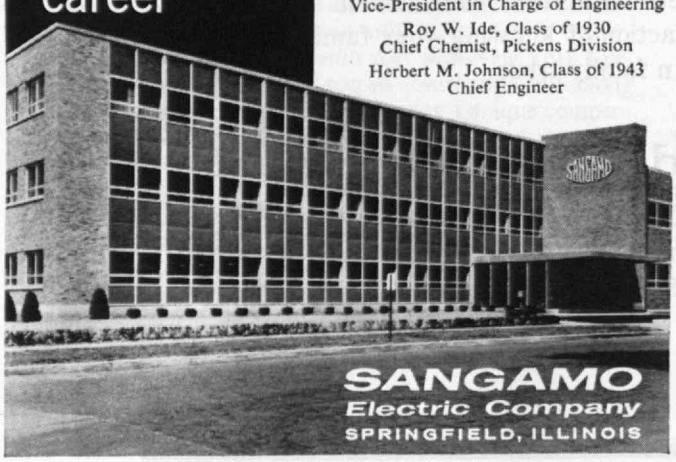
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The Coaches' Review

(Continued from page 34)

The most encouraging aspect of the year's play was the outstanding play of our sophomores. We had sophomores playing in the numbers one, two, three, six, and nine positions on the team. Next year, with our entire team returning, we look for a much better season. — Edward A. Crocker, Coach.

Rifle Team

M.I.T. riflemen participated in the New England Collegiate League and the Greater Boston Collegiate League.

In the N.E.C.R.L. Northern group, we were defeated by Norwich University and the University of Maine. Later in the season, M.I.T. and Maine were tied for second place. This resulted in another match for the two teams and M.I.T. was the victor. M.I.T. defeated Dartmouth, the University of New Hampshire, St. Michael's University, the University of Vermont, Harvard, and Bowdoin. In the New England finals, M.I.T. placed fourth, being defeated by Norwich, Providence College, and Coast Guard Academy.

In the Greater Boston League, M.I.T. lost only to Northeastern. M.I.T. defeated Harvard, Tufts, Boston College, and Wentworth Institute.

In non-league matches M.I.T. was defeated by Army and Navy. In the Coast Guard Invitational match M.I.T. placed ninth among 22 entries. The National Intercollegiate results showed M.I.T. placing 35th in a list of 217 teams.

This year M.I.T. entered a freshman team in the National Intercollegiate Freshman Team Match and placed 18th in the nation. — M/Sgt. James L. Bigham, U.S.M.C., Coach.

Pistol Team

The Pistol Team began its season in October with only one returning letterman and three other members of last year's team. From the men attending the pistol classes, the four most competent were added to the team roster, but one of these had to drop out.

The M.I.T. team normally fires in the North American Intercollegiate Pistol League but this league was not active this year so collegiate matches were limited to the Service academies. Although the team put forth a gallant effort, M.I.T. men were no match for the excellent shooters from West Point, Annapolis, and the Coast Guard Academy.

In the Greater Boston Pistol League, composed of teams from Harvard University and the Rod and Gun Clubs of Saugus, Parkway, Concord, Melrose, Mystic, Arlington, and General Electric, M.I.T. was in first place for the greater portion of the season and only lost out during the last month of competition. The season ended with 16 matches won and four lost. This put M.I.T. in third place, a good showing because the other teams were composed of men who had been firing for years. — Capt. Robert N. Strickland, U.S.A.F., Coach.

Varsity Golf

The team's record was three wins and 12 losses. We were fairly strong at the top two spots with Robert L. Rosenfeld, '59, and William R. T. Smith, '59, but the drop off after that was great. Rosenfeld was again a qualifier in the New Englands and was beaten by the eventual winner in the semifinal round. Next year several fine golfers are moving up from the freshman squad. — John H. Burke, Jr., Coach.

Track Team

The M.I.T. Track Team completed its season with a 2-and-7 record. Wins over New Hampshire, both indoors and outdoors, were chalked up against losses to West Point, Bates, Connecticut, Bowdoin, Springfield, Tufts, and Brown.

(Continued on page 70)



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The Coaches' Review

(Continued from page 68)

Hampered seriously by the weather and a dearth of experienced runners and fieldmen, the indoor season win over the University of New Hampshire proved that spirit and enthusiasm ran high. The relay team, comprised of Daniel J. Thomas, '59, Robert W. Slusser, '60, George L. Withbroe, '61, and James W. Poitras, '61, finished third in the B.A.A. Games. The team also participated in the Tufts Open Meet and the New England A.A.U. Championships.

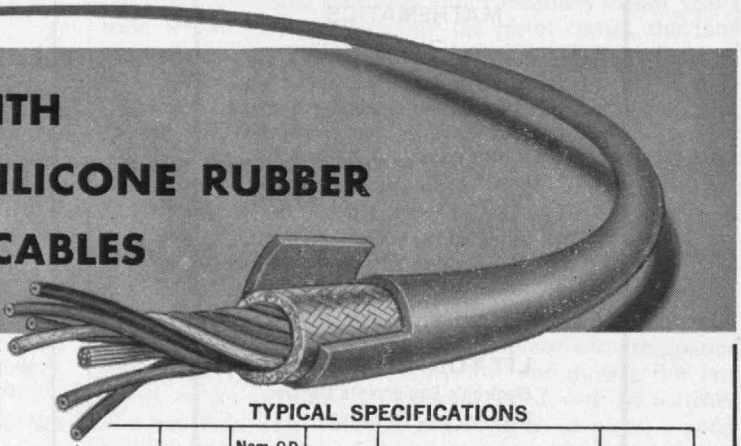
The outdoor season, with three dual meets, a triangular meet, and participation in the Eastern and New England championships, saw renewed interest and some fine competition by the M.I.T. cindermen. With only two seniors, John G. Maier, '59, and Charles O. Staples, '59, to call on, the team relied on juniors and sophomores.

Outstanding for M.I.T. this year and returning next season were: Joseph T. Davis, '61, in the hurdles and high jump; Donald G. Morrison, '61, in the sprints and broad jump; Withbroe and Slusser in the 440; Brian E. White, '61, in the 880 and mile; Paul T. Robertson, '61, and Herbert H. Grieves, Jr., '61, in the distance runs; Captain William J. Nicholson, '60, in the hammer throw; James R. Long, '60, in the weights; and Nathan A. Liskov, '60, in the pole vault. Arhtur S. Warner, '60, a transfer, was a welcome addition to the hurdles and high jump. Others who helped considerably were Robert L. Mullen, '60, Edward O. McCartney, '60, Rollyn G. Graham, '60, Dan R. McConnell, '61, Garrick A. Gustafson, '61, Robert P. Barrett, '60, Will Kenigsburg, '61, and Mannie Smith, '61.

Freshmen (Class of 1962) who should be welcome additions to the varsity next year include: David H. Koch, who established a new Frosh pole vault record; Neil L. Bacote,

(Continued on page 72)

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22 Shld.	19/34	.075	.140	.240	.255	.260	.305
20	19/32	.085	.135	.220	.250	.270	.320
20 Shld.	19/32	.085	.155	.240	.270	.290	.335
18	19/30	.090	.140	.245	.260	.285	.335
18 Shld.	19/30	.090	.155	.270	.285	.310	.385
16	19/29	.105	.160	.265	.290	.315	.380
16 Shld.	19/29	.105	.175	.285	.310	.335	.400
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The Coaches' Review

(Continued from page 70)

a sprinter who broke the Frosh record in the broad jump; Stephen J. Banks in the distance runs; Val Silbey and Joseph E. Crowley, hurdlers; Thomas G. Burns and William I. Koch in the 440; Harold C. Frazier, Jr., and Lawrence A. Coppola in the 880; and weightmen David L. Butler, Bardwell C. Salmon, Charles E. Rein, Peter C. Ommundson, and Edward B. Feinberg. — Arthur E. Farnham, Jr., Coach.

Varsity Baseball

The M.I.T. baseball season opened with a spring vacation trip. Twenty eager ballplayers journeyed to New Brunswick to open the season against Rutgers University. In one of the best-played games of the season, M.I.T. defeated Rutgers 2–1, behind John C. Blinn's ('61) two-hit pitching. The last inning was a spine-tingling experience. Captain Warren H. Goodnow, '59, who caught the first eight innings and singled home the winning run in the eighth inning, relieved sophomore Blinn in the ninth inning with men on second and third, no outs, and proceeded to retire the next three Rutgers batters to preserve the victory. The team closed out the trip with two close losses to Catholic University and Johns Hopkins.

Although finishing with a one-and-five record in the Greater Boston League, the team lost two heartbreaking games: Harvard 0–3, and Northeastern 0–2. Brandeis was defeated 6–2; Boston University, Boston College, and Tufts took the measure of the varsity men in the league competition. Outside the Greater Boston League the team chalked up victories over Bowdoin, Bates, Clark, and Coast Guard, and lost to Worcester Polytechnic and Wesleyan.

The 1959 Baseball Team was one of the strongest to represent M.I.T. since the first season's play in 1949. The leadership of Captain Goodnow, Greater Boston League All Star Selection as a junior and senior, was a key factor in the team's strong performance. Harold J. Parmelee, '60, transfer from Bowdoin, was selected on the Greater Boston All Star team at second base, and his general all-around play highlighted the M.I.T. individual hitting and fielding statistics. Albert L. Beard, '59, a three-year veteran, Elliot N. Fineman, '59, Jack M. Pogarian, '59, Walter J. Humann, '59, and Thomas H. O'Connor, Jr., '60, will be missed next year. — Robert M. Whitelaw, Coach.

Varsity Wrestling

The Wrestling Team started out last December by winning a decisive victory over Tufts University, losing only two of the eight individual matches. Then "old man injury" took over and we never had the original eight starters on the mats again at the same time. Nevertheless, we managed to beat the University of Massachusetts, but dropped decisions to Harvard, Springfield, the U.S. Coast Guard Academy, Dartmouth, and Wesleyan.

Six of the eight starters last December were sophomores and the others were juniors. Therefore we cannot help but be a little optimistic for next year. — Alex Sotir, Coach.

Fencing Team

The first half of the season went well, as Boston University, Bradford-Durfee Tech, Syracuse, and Holy Cross were soundly beaten, Trinity College was edged, and a hard-fought match was dropped at Cornell. The second half of the season, however, saw a sharp reversal of form not wholly related to the higher caliber of our opposition. Even so, the Fencing Team preserved its record of never going beneath .500. The record for this season was: six won, five

(Concluded on page 74)

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The Coaches' Review

(Concluded from page 72)

lost, second place team in the New England Intercollegiate Championships (by five points).

I believe that the lack of familiarity with the new electric foil hurt our chances, and for a time the varsity was fencing four difficult meets two or three days apart. This made it difficult to stay at peak condition. – Silvio Vitale, Coach.

Freshman Swimming

This was probably one of the greatest freshman swimming years at M.I.T. Team spirit and the desire to win was high throughout the season and contributed greatly to the record of 7 wins and 2 losses. The team established six new M.I.T. freshman records. The highlight of the season's schedule was the victory over a strong West Point squad.

Freshman Basketball

The freshman basketball record reads: four wins and seven losses for the 1958–1959 season.

Freshman Lacrosse

The Freshman Lacrosse Team was handicapped by the usual problems: Only two boys, both goalies, had played before.

Freshman Squash

The season opened with a 5–4 win over Army at West Point, but the superior experience of preparatory school opponents won the next six matches.

Freshman Wrestling

The Freshman Wrestling Team had some of the most experienced and seasoned performers that M.I.T. has obtained in some time, but the team was incomplete all season. We lacked one and sometimes two weight classes in each meet.

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¶ Moreover, the first Annual Report of Horace S. Ford as Treasurer of the Institute, covering the fiscal year 1933–1934, "evoked comments of approbation and satisfaction," observed the Review editors, "for out of the necessary welter of schedules running almost the entire gamut of the alphabet and occupying 74 pages of 8-point type, emerged the salient fact that the Institute had completed another year on the proper side of the ledger."

¶ Among the new members welcomed by the Faculty in the autumn of 1934 were: Professors Warren J. Mead and Walter G. Whitman, '17, as Heads, respectively, of the Departments of Geology and Chemical Engineering; Associate Professor Joseph H. Keenan, '22, in the Department of Mechanical Engineering; and Assistant Professors Francis Bitter and Robley D. Evans, respectively, in the Departments of Mining Engineering and Metallurgy and of Physics.

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(Concluded on page 78)

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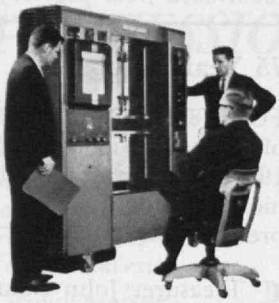
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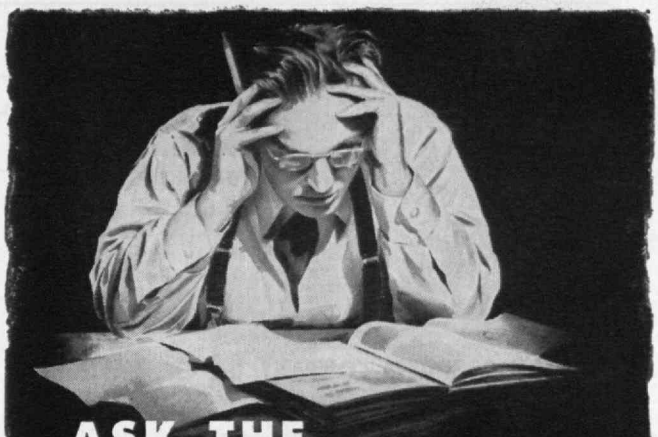
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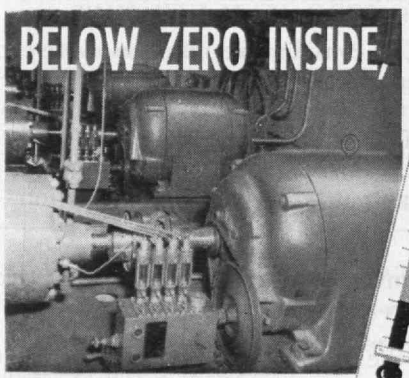
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Institute Yesteryears

(*Concluded from page 76*)

75 Years Ago . . .

FOR 1884–1885, registration totaled 579, an increase of 136, or 31 per cent, over 1883–1884. There were 193 freshmen of the Class of 1888, nearly one-third more than had entered with the Class of 1887 in the previous autumn.

¶ Treasurer John Cummings, in his Annual Report for the fiscal year ending September 30, 1884, recorded that current income of $123,409 had been $40,686 less than the expenses of $164,095. Invested assets were $346,313, and the book value of the educational plant stood at $631,810.

¶ From *The Tech* of November 5, 1884: "The final demonstration in Boston of the Presidential campaign was the Republican torchlight procession, which took place the night before election. In it the Institute, as has been its custom, took part. . . .

"The Committee, to whom a mass meeting of students had given control, provided uniforms, each consisting of a loose robe of gray cloth trimmed with cardinal . . . a close-fitting breast-piece, gray, displaying the year of the class to which its bearer belonged, a mortar-board in the same colors, with a white tassel falling from its brilliant cardinal surface, and a torch. . . .

"The regiment, headed by its own fife and drum corps and the Boston Cadet Band, formed near the gymnasium. . . .

"Transparencies, in considerable numbers, were carried, their sentiments varying through a wide range. The principal one was a massive affair, on which appeared the name of the school, the presidential preferences, as canvassed, *viz.*, Blaine, 371; Cleveland, 156; St. John, 18; Butler, 1; Belva, 1; and the inscription —

" THE FACULTY
" Who first invented work, and bound the free
" And holiday-rejoicing spirit down.

"Unfortunately, the transparency, at first borne at the head of the regiment, proved too much for one man power, and was relegated to a barouche farther back. Deprived of this distinguishing feature, the first Institute companies were mistaken for butchers, bakers, Harvards, and Chinamen.

"Observers have said that the tendency of the Techs was to over-sedateness. . . ."

99 Years Ago . . .

AN APPLICATION, in the handwriting of William Barton Rogers, was made to the General Court of the Commonwealth, in which he and 18 other "subscribers [did] respectfully pray for an Act of Incorporation for an Institution to be entitled MASS. INSTITUTE OF TECHNOLOGY." On November 20, 1860, the Secretary of State approved this application for publication in the *Boston Daily Advertiser* after which it was forwarded for action by the General Court when that body assembled the following January.

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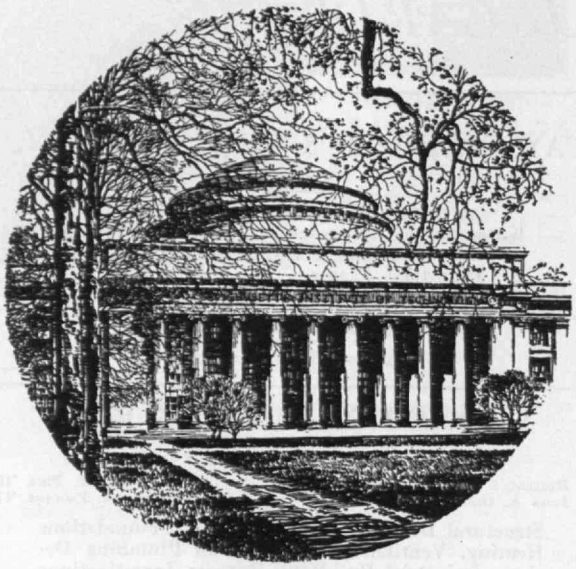
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Club Notes



Distribution of M.I.T. Clubs and Associations in the United States.

Philadelphia Club Visits R. R. M. Carpenter Estate

The Philadelphia M.I.T. Club held its 62nd annual meeting on May 23. We met for a gracious and unusual afternoon and evening get-together at the R. R. M. Carpenter estate, just outside Wilmington. Splendid arrangements were made by a local committee headed by James W. Libby, Jr.'35: Donald F. Carpenter'22, Irenee du Pont, Jr.'43, Frank E. French, Jr.'43, Howard Humphrey'26, Joseph T. Lester, Jr.'44, Carl W. Maynard, Jr.'38, and Carl S. Oldach'41.

Most of the more than 353 convening Alumni took a pleasant afternoon tour through the adjacent Hagley Museum, an exposition of the industrial development of the Brandywines in a horticultural setting. Subsequently, a cocktail hour was held in the Soda House on the estate where the myriad Carpenter hunting trophies are housed. Following dinner in the "Rink," a silver Revere bowl was presented to Nancy (Mrs. Samuel) McCauley in recognition of her many years of zealous work with the Club. The keynote speech of the evening was given by Gen. A. C. Wedemeyer on the "U.S. Posture on the International Scene." Special guests who joined us from Cambridge were Mr. and Mrs. H. E. Lobdell, Mr. and Mrs. John J. Wilson (President of the Alumni Association) and Mrs. E. P. Brooks (wife of the Dean of the School of Industrial Management).

Plans for the coming season are under way. The next meeting is to be at the Franklin Institute. — HERBERT R. MOODY, *Secretary,* 3010 Tower Road, Huntingdon Valley, Pa.

Chicago Club Elects Harlan Davis President

The final meeting of the fiscal year was held June 2. Over 100 members, wives, and guests gathered at the Wrigley Building Restaurant for cocktails and dinner. After dinner Bob Faurot'44, outgoing President, conducted a short business meeting during which the following officers and directors were elected for 1959-60: Harlan H. Davis'40, President; Edgar F. Seifert'19, Vice-president; Mark H. Baxter'50, Treasurer; Robert L. Silberman'48, Secretary; William A. Murphy, Jr.,'39, Director, and Dale D. Spoor'22, Director.

Following the meeting we walked along the Chicago River for about a block to the new Sun-Times Building, one of the most modern newspaper buildings in the country, and a key building in the Fort Dearborn rehabilitation project. We were escorted through the editorial offices, the wire room, type-setting room, and press room by comely hostess-guides. Of probably the greatest interest was the press and mail room where press speeds of 70 miles per hour are obtained and up to 800 copies per minute are produced.

This was an outstanding turnout and many new friends were made. Bob Silberman made the arrangements and is to be congratulated for a job well done. — J. T. SHUTACK'43, *Secretary,* Room 1700, 135 South LaSalle Street, Chicago 3, Ill.

California Club Visits Atomic Reactor

The M.I.T. Club of Northern California has held three meetings this year.

On April 28 a dinner meeting for 62 members and guests heard Mr. E. P. Stevenson'19, Chairman of the Board, Arthur D. Little, Inc.

On Saturday June 6, 70 members, wives, and guests went to Vallecitos, near Livermore, Calif., to inspect the General Electric atomic reactor. After the day's field trip, 52 members, wives, and guests got together at dinner and were privileged to hear Dr. R. D. Bennett, Director of the Vallecitos Project, give a resume of the activities at Vallecitos, plus a brief discussion of the Institute since he had recently returned from a trip to Cambridge. The Club is indebted to M.I.T. Alumni at Vallecitos who made the tour possible and were available to show the Club members through the facility.

The Club sponsored, for the first time in its history, a buffet chicken dinner honoring the freshman class entering M.I.T. this fall. There were 9 freshmen and 12 present students who live in the Bay area in attendance, as well as 11 Alumni. The movie, "Social Beaver," was shown. — D. K. MCNEAR, *Secretary-Treasurer,* 65 Market St., San Francisco.

'Social Beaver' Goes to Oslo

The first week in July marked a visit to Oslo by Mr. and Mrs. Oscar H. Horovitz'22. This was the occasion of a meeting of the M.I.T. Club of Norway at the home of Mr. and Mrs. Harold R. Bjerke'23. A total of 18 Alumni were present for cocktails, a showing of "Social Beaver" and an excellent smorgasbord.

Puerto Rico Club Dines Well and Often

Since the election of the Board of Directors of the M.I.T. Club of Puerto Rico for 1959, a lot of activities have taken place and more are scheduled. The energetic and generous president, Angel A. del Valle'43, has invited the members of the board to a number of business-lunch meetings at downtown restaurants and most often footed the bills. Richard Bolin'50, the amiable vice-president, arranged a couple of smokers at the Beer Garden of the Cervecería Corona in Santurce—the first one on April 8, when Navy films were shown, and the second on July 22 when we were shown "The New Age of Architecture," loaned to us by the American Institute of Architects. The secretary, also projected his color slides of the fabulous temples of Thailand, the exotic gardens of Japan and the amazing complex at the World's Fair in Brussels — part of his collection of shots during his recent trip around the world. There were about 30 beavers present.

During the Governor's Conference in Puerto Rico, an impromptu cocktail party was given by the Club at the San Juan Intercontinental Hotel in honor of Governor Furcolo of Massachusetts and his party. The beavers enjoyed toasting the Governor and pumping him about current doings at Cambridge, Boston and other parts of the state. The wives of the beavers presented Mrs. Furcolo with a gorgeous orchid.

On Sunday, Augusts 16, the beavers of Puerto Rico and their families motored to the beach house of Pedro A. de Castro '40, former Club president, at Cerro Gordo in Vega Baja, for a whole day of fun: picnicking, swimming, skin-diving, playing dominoes. A wonderful lunch was prepared by the helpful wife of Telésforo Carrero'45, with the able assistance of Ulises Barros Loubriel'55, who brought the food, and Daniel Driver'50, who brought the refreshments and the ice. More than 70 hungry persons must have attended the family picnic, judging by the gusto with which the food was devoured. — A. C. KAYANAN, *Secretary,* P. O. Box 5346, Puerta de Tierra Station, San Juan, Puerto Rico.

All About the Fiesta In Mexico Last Spring

The 11th Fiesta of the M.I.T. Club of Mexico City, founded in 1910 as the earliest of the present 26 foreign M.I.T. Clubs, took place March 12-14, 1959. Our special guests of honor were John J. Wilson'29, the 65th President of the Alumni Association, and Mrs. Wilson.

The program opened with an assembly of local Alumni and visitors from the United States for noonday cocktails on Thursday, the 12th, at the Hotel Vasco de Quiroga; after which the ladies were escorted for a luncheon and garden party at the home of Salvador Madero'29 in the *Club de Golfo México,* at Tlalpan.

Meanwhile, 54 Alumni sat down for their luncheon in the *Salon Verde* of the hotel. At each place there was a stein with a special M.I.T. seal design on each side of which, in proper colors, were the Mexican and American flags, while on the reverse of the stein appeared the gleeful beaver, symbol of the 11th Fiesta. This permanent souvenir was the first of the newly adopted "Stein tradition" ceded to Mexico.

Following luncheon, Dr. Manuel Sandoval Vallarta'21 guided a group of the Alumni around the strikingly beautiful campus of the University of Mexico, the oldest university of the Americas, and showed the modern facilities such as the atomic energy laboratory, the computer center, and the department for cosmic ray research. Just before the end of our visit, the rector of the University, Dr. Nabor Carillo Flores, brother of Mexico's ambassador to Washington, received us in his office to extend a friendly welcome.

On Friday, the 13th, we had evening cocktails and a buffet supper on the two upper floors (the 41st and 42nd) of the *Latino-Americana* building, the highest skyscraper in Mexico City. These observation floors with four glass walls permitted an unobstructed and fairyland-like view of the whole capital city.

On Saturday evening, the 14th, came the traditional *Noche Méxicana,* held for the third year in the spacious gardens of the residence of our president and Sra. Cornish in San Angel. The gardens were artistically illuminated and decorated with Mexican motifs; and had a number of *puestos* where special cooks in native costume offered a variety of tasty Mexican dishes prepared in the old-fashioned way. In one corner, there was a native basket weaver plying his trade. Most local Alumni, their wives, and guests, wore Mexican regional costumes which, with the decorations, made the party most colorful.

A *piñata,* the traditional beaver with his sombrero and slide rule, mounted on a *piñto* black and white burro, was assaulted with a broomstick, at which exercise most of those attending took turns. It was a surprise and delight to all to watch Charlie Smith'00 do his "work," although the honor of breaking it fell to an anonymous Alumnus from the States.

The *piñata* ceremonies were climaxed by the touching-off of a magnificent display of fireworks, showing the Mexican flag in colors and spelling out the words, "M.I.T. Fiesta in Mexico."

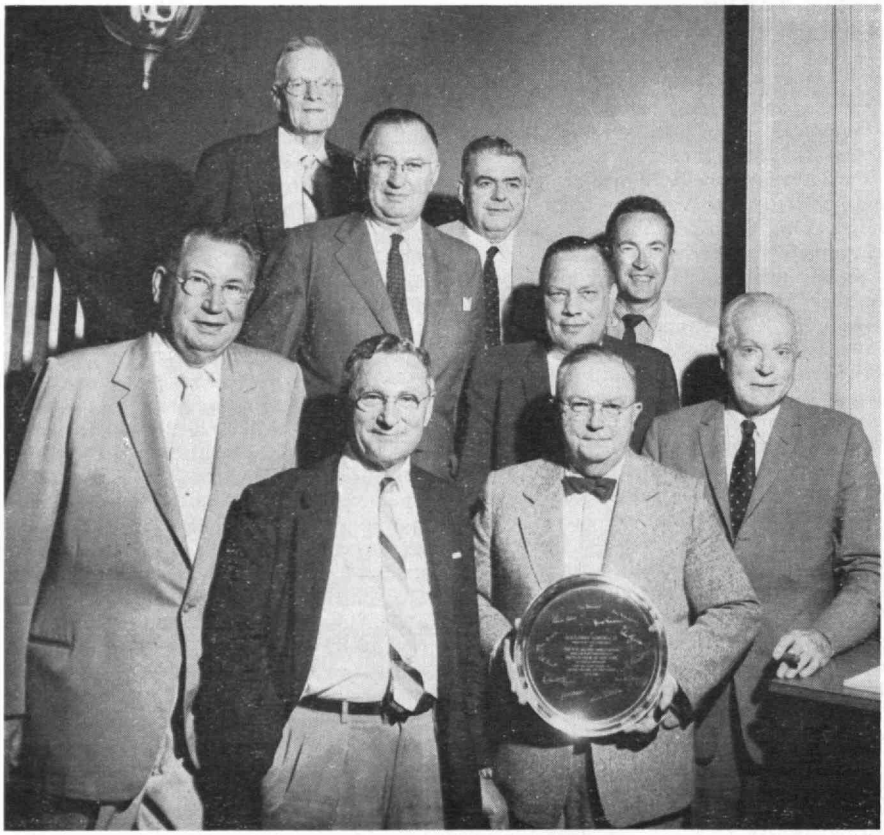
We hope that our visitors felt rewarded for coming — and that they and many other Alumni from the United States will be with us for the 12th Fiesta which is now scheduled to take place in Mexico from March 10 to 12, 1960.

Among our Club's prominent local guests with their wives at the 11th Fiesta were: Gustave Maryssael and Lic. Carlos Prieto, Presidents, respectively, of our local light and power company and our steel company; minister counselor Cecil W. Gray and economic counselor John Ordway, of the U.S. Embassy; commercial counselor C. W. Van Tighem, of the Canadian Embassy; and William B. Richardson, former vice-president and general manager of the Mexico branch of the National City Bank of New York.

Alumni visitors were: Charles E. Smith'00 of New Haven, Conn.; H. E. Lobdell'17, John A. Lunn'17, William H. Seymour'17, John A. Dow'23, David W. Skinner'23, John J. Wilson'29, and Vincent T. Estabrook'36, all of the Boston area; John J. Murphy'23 and H. D. Kinsey'24, of the New York area; Cecil H. Green'23, of Dallas, Texas; Charles O. Dueval'24 and Louis J. Darmstadt'26, of Norwich, Conn.; David A. Meeker'24, of Troy, Ohio; Rockwell Hereford'24, of San Francisco, Calif.; Robert W. Richardson'26, of Swarthmore, Pa.; Alfred W. Gass'26, of Greenfield, Mass.; Frederic A. Celler'29, of Homer, N.Y.; Leon A. Fraikin'31, of Montreal, P.Q.; Lorenzo Manzanilla, Jr.'31, of Mérida, Yucatán; John W. Hoover'32, of Coral Gables, Fla.; Wilfredo A. Pflucker'34, of Lima, Peru; George C. Sumner'40, of Fort Worth, Texas; Theodore Q. Eliot'42 and John R. Hodson'50, of Baytown, Texas; John S. Bonner, 3rd,'50, of Houston, Texas; Francisco R. del Valle'54, of Chihuahua, Chih.; and Marcos M. Suarez Ruiz'55, of Monterrey, N. L.

Attending as active members of our M.I.T. Club were: General Emilio Madero '02; Manuel S. Vallarta'21; Viviano Valdés '21; Fernando de la Macorra'23; Clarence M. Cornish'24, President of the Club; Thomas M. Nevin'24; Augustine M. Valdés '25, Treasurer of the Club; Oscar Aros Villa '29; Leon Avalos-Vez'29; Salvador Madero '29.

Also, Emilio N. MacKinney'30; Alvino Manzanilla Arce'31, Secretary of the Club; Lyman Chandler, Jr.'31; T. Antonio Chemor'32; Carl W. Ziegler'32; José B. Calvo'33, of Panama City, Panama; Willard D. Chandler, Jr.,'34; Fernando M. Gallardo'35; Leonardo Zeevaert Wiechers'40; José-Carlos Z. de la Macorra'42; Enrique Curiel'43; Leopoldo Nieto-Casas'44; José Felipe Pescador'45; Jorge M. Sanchez Aguilar'46; James J. Rattray'48; Charles W. Davis'49; Clarence M. Cornish, Jr.'50; Hector M. Velazques'51; Peter R. Ehrenberg'52; Max Michel'53; Miguel A. Santaló Cortina'54; Armando Santacruz Baca'54; Guido D. Guzman'55; and Alfonso del Valle Pena'57. — ARMANDO SANTACRUZ BACA'54, *Review Secretary,* Cerrada de Amores 24, México, D.F.



A testimonial tray bearing the signatures of living Past Presidents of the M.I.T. Club of New York was presented on June 3, 1959, to H. E. Lobdell, '17, Executive Vice-president of the Alumni Association. Left to right, in the front row, are: C. George Dandrow, '22; Eugene R. Smoley, '19; Mr. Lobdell; and Thomas D'A. Brophy, '16; and, in the rear, are: Richard H. Ranger, '11; Saxton W. Fletcher, '18; Alfred T. Glassett, '20; Bernard H. Nelson, '35; and Armand Bruneau, Jr., '18.

Cincinnati Club Holds Reception for Freshmen

The M.I.T. Club of Cincinnati held its annual beer party at the Hamilton (Ohio) Boat Club on the banks of the Great Miami River on August 5. This party is given each year by the Beckett Paper Company of Hamilton, which now harbors six M.I.T. Alumni. Nearly 50 members turned out this year, a record attendance. The logistics problem proved too great, in fact, and, for the first time in the history of these stag outings, the beer supply gave out.

On August 26, the Club held its annual reception for entering freshmen and undergraduates to acquaint new students with others from this area. Having attended the reception, the freshmen have a much better notion of what to expect from their studies, living quarters, and social activities. A movie, *The Social Beaver,* was shown to demonstrate the scope of extracurricular opportunities. Alumni who attended this reception were: Charles Axelrod, Club President, Jack Comer, Sam Crew, Gordon Foote, Ed Fox, Jim Pearce, and Jim Stolley. The students were Bruce Bardes, Tom Duke, Barry Franz, Henry Gertzman, Ron Koetters, Ken Reinschmidt, and Earl Van Horn.

If there are any Alumni in the Cincinnati area who are not included on the Club mailing list, please notify — JAMES STOLLEY, *Secretary,* 11 Beverly Drive, Hamilton, Ohio.

Central Massachusetts Programs Outlined

Eight members of the M.I.T. Club of Central Massachusetts attended the third Alumni Officers' Conference on September 11 and 12. Those present were: Bob Brown '22, Fred Dillon'22, Herb Hayden'23, Bob Dawes'26, Art Lowery'32, Haskell Gordon '38, Irv Williamson'50, and Harry Duane '57.

We were honored and pleased, as everyone in the club should be, to be present when Bob Dawes'26, our past president, received one of the eight bronze beaver awards made by the Alumni Association. Bob was awarded this prize for his outstanding work as chairman and co-ordinator of President's Night last March, at which President Julius A. Stratton spoke to 250 high school teachers of Worcester County. The M.I.T. Alumni Association looked upon President's Night as the high point of all the M.I.T. club activities across the nation.

The program committee had a meeting under the large dome in Building seven to outline tentatively the club events for this year. The first meeting will feature David Rose'50, Professor of Nuclear Engineering, and Volta Torrey, Editor of The Review. This two-man team will present a question and answer panel on fusion.

The second meeting of the year will hear Professor Samuel A. Goldblith'40, Professor of Food Technology. At the third meeting, Bill Speer, Associate Dean of Students, will bring three foreign students and one American student to Worcester for a panel discussion of their impressions of America and M.I.T.

At the fourth meeting of the year, the M.I.T. Club will attempt to obtain a block of tickets for the Boston Pops from the M.I.T. student body, to join with them at Tech Night at the Pops. — HARRY B. DUANE'57, 15 Algonquin Road, Worcester, Mass.

New York M.I.T. Club Announces Officers

The Club got off to a vigorous start this year with a number of operating committee meetings during the summer, including an informal meeting in Cambridge during the Alumni Officers' Conference, September 11 and 12. Club members seen and heard at the conference included Olie Hoag'35, Bill Correale'24, Gaby Garbarino'33, Harvey Kram'42, and Bernie Nelson'35.

Two new appointments were made at these pre-season meetings: Bob Gunther'43 and Ed Goodridge'33 were nominated regional vice-presidents of Long Island and Westchester, respectively. Bill Correale was also made vice-president in charge of major programs. Other officers include: Ed Edgar '35, President; Gaby Garbarino'33, Vice-president of promotions; Thornton Smith '24, Vice-president of finance; John Casey '40, Vice-president of membership; Dave Buchanan'31, Treasurer; and Howie Bollinger'43, Assistant Treasurer. Anchor men for the coming year are Bob Murphy'28, chairman of the class luncheons; Dick Stephan'50, chairman of younger members' activities, and Lars Ekwurzel'35, editor of the news bulletin.

Several varied activities have been scheduled for the year in Long Island, Westchester, and New York. The annual beer party will have taken place in October. In mid-November, Westchester is planning a dinner meeting and Long Island has scheduled a "travel party." The Club will again be addressed by excellent speakers this year. Details will be developed in this corner in coming issues. — JAMES M. MARGOLIS'52, *Secretary,* 218 Richbell Road, Mamaroneck, N. Y.

Record Crowd to Hear Stratton in Cleveland

Big doings in Cleveland on Thursday, November 19. Dr. and Mrs. Stratton will be here for what undoubtedly will be the largest meeting in years. All Alumni from Cleveland, Akron, Toledo, and Erie areas, parents of students, and representatives of high schools and preparatory schools have been invited. This is one meeting that should not be missed. Bring the gals.

The annual fall beer party was held October 6 at the Pilsner Brewing Company. We are hoping the excellent turnout was indicative of what we may expect for all our meetings this year. We are again planning a student luncheon during Christmas vacation.

Club President Arthur Zimmerman'37 attended the Alumni Officers' Conference in Cambridge in September and reports seeing ex-Clevelander Lewis Fykse'41 who is now marketing director at Associated Spring Corporation. T. E. Weil'49 represented the Club at the Chicago Alumni Officers' Conference.

The Club was deeply saddened this summer by the death of Pete Murphy'47, one of the best liked and most able young men in Cleveland. — HEATH OLIVER, *Secretary,* 1133 West 9th St., Cleveland 13, Ohio.

Dinner Dance In Schenectady

On May 16, the final meeting of the year for the M.I.T. Club of Central New York was held at Brae Loch Inn in Cazenovia, N.Y. The evening began with a social hour, followed by one of the dinners for which Brae Loch is famous. After dinner there was dancing to the music of Joe Ranieri and his orchestra. It was a fitting climax to the year's activities.

At a short business meeting that evening, the officers elected for the coming year were announced. They are: Gregory G. Gebert'50, President; Paul B. Ostergaard'49, Vice-president; and Charles L. Stockdale'52, Secretary-Treasurer. It seems that the outgoing secretary-treasurer is establishing some sort of a record because he was elected secretary-treasurer at a meeting which he did not attend, and was announced as the new Vice-president at a meeting which he could not attend.

Dewey J. Sandell'49 announced that the recipient of the scholarship from the M.I.T. Club of Central New York Scholarship Fund this year was Miss Marley Ann Bielefeld of Auburn, N.Y. Miss Bielefeld has done some outstanding work in science fairs. She is planning to study chemistry at the Institute. — PAUL B. OSTERGAARD, *Secretary-Treasurer,* 111 Sherbrooke Road, East Syracuse, N.Y.

California Alumni Meet Undergraduates

The M.I.T. Club of Southern California has received a very fine set of pictures of M.I.T. that were taken by Edward Haig Parker, the grandson of Llewellyn A. Parker'06.

A spring dance was held on May 22, at the Delmar Club in Santa Monica. The following Alumni attended: R. D. Baxter '49, A. R. Beckington'46, R. Brandies, T. J. Chang'37, M. R. Chetron'56, R. M. Copsey '44, R. S. DeWolfe'36, R. G. Dickey'47, E. B. Gardner'48, J. R. Grace'49, A. R. Gruber'46, R. B. Humphreys'48, J. Hyman, R. B. Jackman'32, H. R. Jex'51, I. A. Kohn'50, T. G. Loomis'44, H. D. Phillips '57, W. A. Sauter'46, R. H. Smith'43, V. Stanley'44, L. E. Stewart'43, R. Sullivan, A. Swarz, A. F. Wagner'38, and C. H. Woodmansee'44.

A "dessert" get-together was held for all upper classmen and entering freshmen on September 2, at the University Club in Los Angeles. The meeting gave entering freshmen the opportunity to get first-hand information about M.I.T. from upper classmen, Richard Anderson'62, Robert Kurkjian'62 and Roger Whitman'61, as well as a recent graduate, Richard Hall'59. The following freshmen were present: Laurence Demick, Barry Kurtzman, Richard Morton, Carll Pontius, Larry Renger, and Harold Solomon. Alumni in attendance included: Hiram Beebe'10, George Cunningham'27, Richard S. DeWolfe'36, Page Golsan, Jr.'34, Robert E. Hiller'31, T. Gary Loomis'44, Samuel E. Lunden'21, Robert Welles'15, Frank A. Yett'40, and Louis Young'50. — JOSEPH W. MARSHALL, *Secretary,* Bymco Engineering, 904 West Hyde Park Blvd., Inglewood, Calif. LOUIS YOUNG, *Assistant Secretary,* 2234 So. Spaulding Ave., Los Angeles 16, Calif.

Prof. Wadsworth Speaks To Connecticut Alumni

The Clam Box in Westport, Conn., was the site of the spring dinner meeting of the M.I.T. Club of Fairfield County, May 13, 1959. After dinner Tony Savina'30, President, introduced Dr. George P. Wadsworth, Associate Professor of Mathematics at the Institute, who spoke excellently on the timely topic, "The Application of Probability Theory as a Tool for Improving Management Decision Making." Dr. Wadsworth enlightened us on the use of statistical techniques in solving many of the problems facing the business man today.

A question period followed, which included a short but lively discussion of the application of probability theory to stock market investments.

Forty-three persons attended, including Fred G. Lehmann'51, Assistant Secretary of the Alumni office. — ELMER W. CROUTHERS'55, *Secretary,* 152 Norman Circle, Stratford, Conn.

Alumni Fund Drive Thrives in Rochester

Leo Cravitz, Fred Kolb, Jim Littwitz, Arnold Mackintosh, Ralph Peters, Don Ramsey, Bill Summerhays, and Fred Tone attended the third Alumni Officers' Conference for club officers and educational councillors. These visits to Cambridge are guaranteed to recharge your interest in M.I.T. Anyone who has the opportunity to attend should not pass it up.

The Alumni Fund drive in the Rochester area achieved a remarkable record of 83.1 percent eligible Alumni contributing. Phil Kron directed this drive assisted by Elmer Andrews, Allan Cobb, Leo Cravitz, Al Gilbert, Skip Mott, Andy Price, Don Ramsey, and Bill Summerhays. — ARNOLD MACKINTOSH, JR., *Secretary,* 164 Glen Haven Road, Rochester 9, N. Y.

Bruce Weston Heads New Mexico Club

The luncheon meeting on July 9, designated the annual meeting, was the occasion for installation of the new club officers. Elected president was Bruce Weston'54; vice-president, Max Ilfeld'24; and member-at-large, Leonard Ehrman'53. J. E. Gross'50 will continue as secretary-treasurer for another year. The voting for this slate was unanimous. A committee consisting of F. C. Alexander'32, G. W. Rollosson'47, and W. Perret'30 was named to study the possibility of establishing the "Fred Given Scholarship Fund" to honor the recently deceased Mr. M.I.T. of New Mexico. Dave Roper, an M.I.T. student, who is working this summer in Albuquerque, was introduced to the Club. — J. E. GROSS, *Secretary,* 1208 Florida N.E., Albuquerque, N.M.

Oklahoma City Club Tours Aviation Agency

The Oklahoma City Alumni have started the 1959-1960 season with a tour to the Federal Aviation Agency on August 26, and an evening session where films were shown on September 2. At the F.A.A. headquarters we had a luncheon and then were conducted through the laboratories and facilities of Flight Operations and the Air Worthiness Division.

At the evening meeting we saw films on *M.I.T. Automation* starring Professors Norbert Wiener and Claude Shannon; then the picture, *In Your Defense,* which is the story of the Lincoln Laboratory and the Semi-Automatic Ground Environment (SAGE) system that was developed by M.I.T. for the Air Defense Command, United States Air Force.

In attendance were: Dr. Louise Jordan '31, Robert H. Burns'46, Breene M. Kerr'51, Robert B. Gow'34, Guy L. Arnold'30, Robert W. Vahlberg'37, and yours truly. — JOHN P. DOWDS'51, *Assistant Secretary,* 2821 First National Building, Oklahoma City 2, Okla.

Women's Association Meetings Announced

The M.I.T. Women's Association has arranged the following programs for its 1959-60 season:

November 3 — "Architect-Decorator Collaboration," Mrs. Mary M. Kennedy and Robert C. Dean'26, at 7:45 P.M., 29 Hundreds Road, Wellesley Hills, Mass. This will be freshman night.

December 1 — "Russia in the Eyes of a Metallurgist," Dr. Thomas B. King, at 7:45 P.M., M.I.T. Faculty Club. This will be graduate student night.

February 13 — "Thinking Machines," Professor Herbert M. Teager'52, at 2 P.M., Emma Rogers Room.

April 11 — Dr. Julius A. Stratton'23, will talk on plans for future progress at the Institute, at 7:45 P.M., M.I.T. Faculty Club. This will be all women students' night.

May 14 — "The Little World," Henry B. Kane'24, at 2 P.M. at the Endicott House in Dedham.

Dinner at 6:30 P.M. will precede the evening programs, and luncheon at 12:30 will precede the afternoon programs.

C. L. Wu Elected Head Of Club in Taipei

New officers elected at a meeting of the 91st M.I.T. Club on July 29 at Liberty House in Taipei are: President, C. L. Wu'18, 218th Lane, Tsuan Chow Street; Vice-president, Joel I. Connolly'16, MSM/C, Union Building; Secretary, Yu-chi Chang'58, 34 Roosevelt Road, Section I; and Treasurer, Yen Shen'42, all of Taipei.

President C. Y. Chen'18 opened the meeting, Mr. S. W. Hsu gave a vivid report of recent events in the United States, Mr. Yen Shen made a brief report about the China Development Corporation, and Mr. T. C. Cheng talked about Taiphoon for a few minutes. Others present included C. F. Hsu, H. T. Liu, Chin-chun Tai, H. T. Lee, J. A. Lo, Kow Kwong Choong, and Z. Y. Chow. — YU-CHI CHANG, *Secretary.*

A new Class Reunion Manual is available. If interested contact Fred G. Lehmann, Assistant Secretary of the Alumni Association, Room 1-271, M.I.T.

Ashworth Is Host To Fall River Club

The annual meeting was held Wednesday, June 24, in Tiverton, R. I., at the home of Robert C. Ashworth, Jr.'25, where the members were guests of Bob Ashworth for a yacht trip, cocktail hour, and smorgasbord. The afternoon yacht trip was on Narragansett Bay from Tiverton to Newport and return. In Newport, many of the federal government buildings and the waterside of part of the famous 12-mile drive were viewed. After an enjoyable cocktail hour and a very delicious smorgasbord, new officers were elected. They are: Robert C. Ashworth, Jr.'25, honorary president; Benjamin F. Hampshire'25, President; Albert A. Stewart'32, Secretary-Treasurer, and Lester Glickman'32, Assistant Secretary-Treasurer.

After the election Fred Lehmann'51, assistant secretary of the Alumni Association, brought the members up to date on Institute and Alumni affairs. Tentative plans for a fall meeting were discussed.

The following members were present Robert C. Ashworth, Jr.'25, Nick J. Biwer '56, John F. Brady'48, Robert F. Burnett '10, Richard H. Gee'20, Lester Glickman '32, Oliver S. Jennings'08, David Kaufman '23, Joseph L. Kennedy'26, Morris Lepes'36, Robert L. Moore'52, Duncan S. Owler'16, Palmer Scott'21, Caeser A. Spero'44, Albert A. Stewart'32, Saul Wolf'50 and Carl Zeitz '42.—ALBERT A. STEWART, *Secretary-Treasurer,* 124 Barnaby Street, Fall River, Mass.; LESTER GLICKMAN, *Assistant Secretary-Treasurer,* 1 Jude Street, Middletown, R. I.

Jack Smyser Is Host To Lehigh Valley Club

The annual spring meeting of the M.I.T. Club of the Lehigh Valley was held Saturday, June 6, at Jack Smyser's country home in the Saucon Valley. It took the form of a picnic, with a catered supper being served. Several of the boys played golf in the afternoon at the Saucon Valley Country Club and were joined by their wives and other couples for a total of 38 people in the late afternoon. It was a beautiful day but marred a little by a couple of thundershowers.

After a delicious supper and plenty of beer, a brief meeting was called with the members standing in a circle. It was announced that C. W. Gotherman'13, of Palmerton, had passed away. He had been a faithful member of the Club, and it was decided that a small memorial should be donated to the Heart Fund or other charity. The nominating committee's recommendations were accepted and the following elected to office: President, J. M. Smyser'35, Vice-president, Robert Dean'48, Treasurer, M. A. Copeland'40, members-at-large, W. F. MacKenzie, Jr.'45, W. V. Bassett'39, and W. A. McGahan'47.

The rest of the evening was spent playing eight interesting and challenging games which Jack had borrowed from a friend and set up on the lawn. This was a lot of fun and served to get us all better acquainted — particularly when it became so dark that automobile headlights and flashlights had to be used to finish.—J. T. ACKER, *Secretary,* 154 W. Langhorne Avenue, Bethlehem, Pa.

Dinners Highlight Washington Season

As a result of the action of the 1959-1960 executive committee, taken at its first meeting on June 22, 1959, Mr. Jack J. Phillips'38 was co-opted to that committee as a member-at-large. At the same meeting it was decided that a schedule of activities similar to that of the 1958-1959 season would be followed for the 1959-1960 season. The Washington area Alumni can look forward to three dinner meetings, featuring prominent and timely speakers, to be held in October, February, and May. The annual luncheon meeting, to which M.I.T. students and prospective applicants are invited, will be held between Christmas and New Year's Day.

At the second meeting of the executive committee September 1, 1959, plans for the first dinner meeting to be held October 16, at the Cosmos Club, were announced. With the Conant report fresh in our minds, it will be timely to hear Dr. Elbert P. Little, Executive Director of the Physical Science Study Committee, deliver a talk based on his current work. This committee has been formed at M.I.T. to undertake the development of a new kind of high school course in physics.

Washington area Alumni are reminded that the monthly luncheon meetings held in the executive dining room of the Pentagon take place at 11:30 A.M. on the third Thursday of each month. — LT. J. C. BEEBE-CENTER, JR., '56, *Secretary*, 3516 Lowell St., N. W. Washington, D. C.

Billman Is President Of Miami Valley Club

The fourth and final meeting of the M.I.T. Club of the Miami Valley was held Saturday, June 27, at Round Camp in Hills and Dales Park. Twenty-five Alumni, wives and friends gathered at this cool, picturesque spot and enjoyed a pleasant social hour followed by an exceptionally fine picnic supper. We were pleased to have as our guest Stan Zaborowski, who is entering the Institute this fall. He is an honor graduate of Jefferson Township High School and has a scholarship at M.I.T.

Dinner was followed by election of officers for 1959-60. Charles M. Billman'25 will serve as president, and William L. R. Rice'53 will be secretary-treasurer. — CHARLES M. BILLMAN, retiring *Secretary-Treasurer*.

The Dames Will Be Busy

The M.I.T. Dames plan two meetings a month this year and will hear talks on subjects ranging from flower arranging to scientific research of interest to Dr. Norbert Wiener. In addition, there will be regular weekly bridge, swimming, and sightseeing parties.

Well-established activities that are on the Dames' calendar again this year include Dean and Mrs. Frederick G. Fassett's open house, a Christmas dance, a children's Christmas party, a bake sale and a fashion show. The program will end in May with a graduation dinner and presentation of the Mrs. James R. Jack award to the Dame of the Year.



At M.I.T. Club "President's Night" in Worcester, Mass., last spring. From left, Dr. Stratton, Robert T. Dawes, '26, and Arthur B. Bronwell.

Deceased

WILLIAM K. CAMPBELL'86, June, 1959
CHARLES G. MERRELL'88, no date given
MRS. ADELAIDE S. BLACKMER'90, May 27
ROBERT S. BALL'91, July 23*
JOSEPH A. WARREN'91, July 21*
JOHN S. CODMAN'93, September 9
J. VAUGHAN DENNETT'93, July 6
FREDERIC HALE KEYES'93, June 21
EDWARD L. STURTEVANT'96, February 24
WINTHROP B. WOOD'98, September 7
HENRY C. EATON'99, June 19*
ROY G. BURNHAM'00, June 19
RALPH HAMLIN'00, May 19*
CHARLES H. HUGHES'00, May 22*
BERTRAM C. HOPEMAN'00, September 25, 1958*
CHARLES W. DANFORTH'01, June 22*
WALDO G. WILDES'01, June 27*
ARTHUR T. NELSON'02, May 4*
PHILIP R. SMITH'02, December 17, 1957
WINTHROP C. AVERY'03, July 21*
ERNEST A. COMER'03, July 2*
MRS. WILLIAM A. HUTCHESON'03, July 23*
ROBERT F. MANAHAN'03, June 29
JOHN F. BLACKIE'04, September 28, 1958
GUY C. RIDDELL'04, July 19*
THOMAS P. BEDFORD'05, July, 1959*
DANIEL HINE'05, no date given*
PAUL A. MONTANUS'05, April 21
EDWIN L. SMITH'05, December 17*
GEORGE W. HATHORN'06, June 1*
CHARLES A. MERRIAM'06, July, 1959
RALPH G. THAYER'06, March 28*
EDWIN BONTA'07, July 17*
KENNETH E. CARPENTER'09, May 14*
CHARLES E. CREECY'10, January 29*
JOHN J. HIGGINS'10, August 17, 1958*
RALPH W. PERKINS'10, June 25, 1958*
MARTIN O. SPARROW'10, 1958
HALE SUTHERLAND'10, May 22*
MYRON J. TURNBULL'10, June 28*
RALPH G. ADAMS'11, July 17*
HARRY L. MANLEY'11, May 15*
ARTHUR S. HUDDELL'12, August 2, 1957*
FRANKLIN A. BENT'13, June 23
ALBERT C. BROWN'13, July 23
PAUL R. FELLOWS'13, no date given
FRED C. HERSOM'13, March 25
ARTHUR L. TOWNSEND'13, August 17*
FERNAND C. WEISS'13, May 28
OLIVER E. CONKLIN'14, June 16*
ROY H. CROSS'14, August 16
WALTER J. HAUSER'14, July 13*
HOWARD C. SAMPSON'14, no date given*
WILFORD J. WINNINGHOFF'14; July 8*
FRANCIS E. BUCKLEY'15, June 3*
WILLIAM M. CARR'15, December, 1957*
ROBERT R. HARPER'15, August 24, 1958*
NORRIS E. KIMBALL'15, December, 1958*
FRANK LESLIE'15, May 20*
HOWARD W. GREEN'16, July 8*
LEWIS H. PRATT'16, September 3
HSIEN WU'16, August 8
LESTER C. CONNER'18, September 3
HARRY J. COYNE'18, July 5
EARL G. WATROUS, JR.'18, July 2
ELIOT H. BRYANT'19, no date given*
FREDERICK J. GIVEN'19, June 25*
FREDERIC M. LEE'19, February 13, 1957
HENRY G. DOOLEY'20, no date given*
CHARLES T. WILSON'20, March 5*
LANSING T. CARPENTER'21, July 24*
NORMAN D. CONNIERS'21, May 29*
CHARLES F. PARKER'21, May 23*
PRESTON REMINGTON'21, 1958*
GEORGE THOMSON'21, May 26*
VIATCHESLAV V. EFIMOFF'22, no date given*
DONALD S. LAUGHLIN'22, July 8*
GREGORY M. LOUKIANOFF'22, February 27*
ISAAC G. LYCETT'22, October 16, 1958*
JAMES T. MULLIN'22, April 9*
KENNETH M. VREELAND'22, June 12*
RICHARD L. BOWDITCH'23, August 1*
CHANNING P. CLAPP'23, June 19*
JOSEPH L. PARKER'23, August 11*
THOMAS BOEKE'24, 1957
JAMES G. MCPHERSON'24, December 11, 1958
C. FREDERICK ABBOTT'26, no date given
HIRAM BENAMI'27, January 1, 1958*
J. P. F. PILKINGTON'27, August 1*
JOSEPH F. MULVEY'28, June 5
JOHN G. KIRKWOOD'29, August 8
JAMES G. MUIR'30, April 24
F. J. CHEEK, JR.'33, April 23*
JOHN O. JENKINS'33, December 13, 1958*
HENRI F. HOUPERT'35, no date given
RICHARD M. SIEGEL'35, September 12
NATHAN H. SANDERSON, JR.'38, September 13, 1958*
TROY D. GRAYBEAL'39, no date given
JAMES P. HUNSAKER'39, August 14*
ROBERT K. BLANCHARD'40, June 7
FREDERICK K. LOOMIS'40, April 3*
GERARD R. TORBORG, JR.'42, July 12*
GEORGE M. MUSGRAVE'43, July 15*
RICHARD W. HAMILTON'50, July 15
ROBERT B. SULLIVAN'56, July 30*
JOHN U. HECKERT'57, July 25, 1957

Class Notes

'91

Well, we did hold our 68th reunion and banquet at Brookline Country Club on June 13. At 1 o'clock our President and Treasurer, J. Linfield Damon, assembled us and after grace we had a delicious dinner, and much conversation and fun. Present were Cole of North Pembroke, Warren of Cumberland Mills, Maine, Tappan of Newton, Damon of Brookline, and Brown of Littleton. It was announced there had been no death since October 20 in the passing of Walter E. Hopton, and he was acclaimed.

Beside those present, cards of regret were received from: Brand, Bunker, Keene, Pierce, Stix, Urban, and Read.

In addition to the above, Joe Warren brought his entire family, four generations of them, making it a Tech family reunion combined with our banquet of the Class. Linfield brought his daughter-in-law, Mrs. Sherman Damon of Chestnut Hill, and my daughter Margaret came on from Hastings-on-Hudson.

An invitation was sent to Harry Young's daughter Miriam, Mrs. Holden, but a family reunion and guests in New York stood in the way of her coming. By the way, wasn't Miriam Young our class baby? Anyhow, she sent us a $100 check for our class expenses. Fine of her, wasn't it?

I have to report two deaths since our June reunion: on July 23, Robert S. Ball, in Cambridge, England; and on July 24, Joseph A. Warren, in Westbrook, Maine. Notices of these two distinguished gentlemen, will appear in December and January issues of The Review.

I have notice from Review headquarters that two members of our Class were registered and attended the annual Alumni banquet on June 15. These were your President and Treasurer, Mr. Damon, and your Secretary, Mr. Brown.

Carl Bunker got back from a successful visit with his son in Buffalo and is now on the up and up. Good luck Carl. — WILLIAM C. BROWN, *Secretary,* Littleton, Mass.

'92

Arthur Ober and the Secretary were the only two members of our Class attending the Alumni reunion last June. On account of rain the program was transferred to Kresge Auditorium where we listened to a very interesting program. We hope that as many of our class members as are able to, will contribute to the Alumni Fund, and we hope to see some of you at our next meeting — CHARLES E. FULLER, *Secretary,* P. O. Box 144, Wellesley 81, Mass.

'94

The June weekend which included graduation day, the class reunions, and the imposing events of Alumni Day, especially highlighted by the inauguration of Dr. Julius A. Stratton as the 11th President of the Massachusetts Institute of Technology, has now passed into history. All these events have brought a renewed and deep sense of pride and loyalty to the great body of Alumni everywhere. Among these stirring events, one, which perhaps would be regarded as a very minor feature of this notable weekend, was of special significance to us of the Class of 1894, for it consisted of the coming together of more than a third of the survivors of the Class to celebrate the 65th anniversary of our graduation, and to us it was a notable event. While 50-year celebrations are now usual, there has been, so far as can be recalled, no time previously when a class has attempted to hold a reunion 65 years after its graduation, but 1894 acquired this distinction, even though all its living members would have passed the age of 85. Could such a group of old fellows have a happy reunion? The answer is Yes. We had one, and experienced the same warm sense of personal friendship and class loyalty that have pervaded our meetings in former years.

Such a reunion as occurred would not have been possible had we not had as class president a man with the broad vision and generous impulses of Horace Crary, aided and abetted by his charming wife. He had expressed the hope that we might meet once more, and in proof of his belief, he and his wife insisted that they should be hosts to the Class at a dinner to be arranged for Alumni week. Cordial invitations were sent by them to all members for whom addresses were known, inviting those, with wives, and sons and daughters, who might find it possible at attend, to be their guests at a dinner at the Faculty Club on Sunday evening, June 14, the evening preceding Alumni Day. By arrangement, the group met at five o'clock in the Club lounge for an hour of renewal of old friendships, and for the introductions of wives, sons, and daughters. Here the Crarys met their guests, here over a glass of sherry, we revived the memories of former years, and enjoyed meeting the members of the younger generation who had come with their fathers to enjoy the hospitality of Horace and his wife and to share in the general festivity of the occasion. It was at once evident that a good time was being had by all present. Seven of the 17 survivors of the Class that received degrees in 1894 were present for this happy reunion. Horace and his wife had come from Warren, Pa.; Charles Abbot and Mrs. Abbot from Hyattsville, Md.; Howard Barton and his daughter Catherine from Hamden, Conn., and also his son Alfred (M.I.T.'40) from Elgin, Ill. Edward M. Hunt came from Portland, accompanied by his daughter, Mrs. Hovey from Belfast. Joseph H. Kimball and his daughter came from New Britain, and Mrs. Martha King (widow of our beloved "Billy") came from New York, bringing daughter Patricia, now Mrs. Mason, of Westport, Conn. George Taylor came in from Weston, his first reunion in many years. Finally, the Secretary, with his daughter and son-in-law (Prof. Richard Clemence of Wellesley), and the Prescott sons, Robert S.'32 from Lexington, with his wife, and Samuel Chase,'33 from Auburn, N.H. (unfortunately his wife was detained by illness). Thus a fine party of 20 was present. All were especially glad to greet Mrs. King, and it was with regret that Mrs. Albert Tenney, Mrs. Norwin Bean, and Mrs. Henry Warren, now widows, but who have so often met with the Class at our reunions, could not be with us on this occasion because of disabilities. A warm letter of regret and good

Candle Count

Among the Alumni of M.I.T. now there are 61 nonagenarians and 773 octogenarians. LOIS L. HOWE'90, celebrated his 95th birthday on September 25.

Ninetieth birthdays were reached this fall by: HARRY A. BURNHAM'92, October 1; GEORGE W. STOSE'93, October 5; JOSHUA CRANE'92, October 24; ERNEST A. BRAGG'98, October 25; SIDNEY E. HORTON'90, October 28; FRANCIS P. SEARS'90, October 30.

SUSAN L. MAGUIRE'01, November 3; SUMNER B. ELY'92, November 5; WILLIAM D. BRADLEY'97, November 9; HOWARD J. BENSON'98, November 17.

Eighty-fifth birthdays were reached by: ERNEST WOELFEL'98, September 3; EVERETT C. EMERY'98, September 6; HARRIET J. POUTASSE'98, September 16; BENZO KATSURA'10, September 18; EVA H. MORRILL'98, September 20; JAMES M. DRISCOLL'96, September 27; DOROTHY R. MENDENHALL'98, September.

ARTHUR I. FRANKLIN'98, October 1; GEORGE S. HEWINS'96, October 6; ARTHUR G. HAYDEN'01, October 10; JAMES S. MCINTYRE'98, October 24; WILFORD W. DEBARARD'01, October 31; WILLIAM A. WILDER'98, October 31.

JOSE H. AGUILAR'03, November 3; HENRY K. SEARS'96, November 8; JOSEPH W. CLARY '96, November 17; LEWIS T. HOWARD'04, November 24; EUGENE W. RUTHERFORD'98, November 28; DAVID H. HAYDEN'99, November 29.

Eightieth birthdays were reached by: ALLEN B. MCDANIEL'01, September 5; JOHN A. WALLS'99, September 6; ARTHUR L. COLLIER'02, September 7; FREDERICK J. WILKIEMEYER'05, September 7; HERBERT S. MAY'02, September 8; ELBERT G. ALLEN'00, September 11; HARRY H. VALIQUET'03, September 11; PAUL R. PARKER'03, September 13; WARREN U. C. BATON'04, September 14; CHARLES I. AUER'01, September 17; CARROLL W. BROWN'99, September 24; WILLARD W. DOW'01, September 26; LAWRENCE S. SMITH '00, September 27; GEORGE M. WETHERBEE '02, September 29; ROBERT F. WHITNEY'02, September 29; GEORGE B. BRADSHAW'03, September 30.

CHARLES P. TOLMAN'02, October 1; HENRY B. BIGELOW'00, October 3; EDWARD P. FLEMING'01, October 6; JOHN F. ANCONA '03, October 8; WARREN F. CURRIER'03, October 11; LEONARD O. HOPKINS'04, October 23; FRANCIS F. LONGLEY'05, October 23; ROGER W. WIGHT'01, October 26; LEONARD D. CHANDLER'01, October 27; HENRY FITZLER'03, October 27; JOHN HALL'04, October 28; PERRY A. VAUGHAN'06, October 28; LEWIS G. WILSON'04, October 28; JAY B. SIMON'03, October 29; MRS. MARGARET H. SHURCLIFF'03, October 30.

HOWARD MARVIN'02, November 2; HAROLD L. POPE'02, November 5; F. CLARK DURANT, JR.'03, November 7; MISS EDITH A. BECKLER'02, November 8; MANSON A. LYONS'10, November 14; WILLIAM N. BROWN'02, and H. INGRAHAM'06, November 15; HAROLD D. LARRABEE'02, November 16; GEORGE P. SHINGLER'06, November 28; HARRY R. LOW'03, November 30.

wishes came from each of them. We remember with deep feeling the great services and fine fellowship each of the husbands always gave in our former reunions, and it was pleasing to have these splendid letters from their widows.

Our dinner was served in the Vermont Room, which is especially attractive because of the decorations given by the late Governor Redfield Proctor'02, a distinguished son of M.I.T. and a personal friend of many of us. (See photograph in the July Review.) President Crary welcomed us all most cordially and informally, and expressed the great satisfaction he and Mrs. Crary felt in being hosts, and their joy that we could have one more reunion, even if unlike those of years ago. He spoke feelingly of some of the reunions of the past, and of the strong bond of friendship that always has existed among the members of the Class and made it a remarkably unified group of close and loyal friends. He then read a sincere and most happily worded letter from President Stratton, mentioning his fine contacts with several men of '94 during his early days at the Institute as a student and young instructor, and ever since, and his regret that an imperative official engagement prevented him from joining us on this unusual and significant occasion. The letter was highly appreciated. Horace then suggested that each member of the Class present should have something to tell us. Abbot was first called on, and he responded by a song and the recital of two amusing poems which gave us all great pleasure. He also expressed the great happiness of himself and Mrs. Abbot that they could be present and greet once more some of the friends of long ago. Barton followed with words of warm appreciation that he could be with us and his even greater pleasure that he could have his son and his daughter meet members of his Class and be guests of the Crarys. Ed Hunt expressed similar sentiments and spoke of the deep memories of student days and of many reunions. George Taylor spoke of his gratitude that he could be present this year as he had been forced to miss most of the earlier gatherings of the Class. Joe Kimball also brought congratulations and thanks and especially mentioned his long friendship for Horace as they had been students together in the same department in the four years at Tech. The secretary then told or read extracts from some of the letters received from our absent members. It was of interest that he had heard from all but one of the other living members who had graduated in '94. There were fine letters from H. M. Chase (Danville, Va.), F. C. Baker (Gardner, Mass.), F. M. Mann (Healdsburg, Cal.), J. C. Nowell (Hillsborough, Cal.), E. M. Parker, (San Diego, Cal.), G. W. Sherman (Akron, Ohio) and A. W. Tidd (Holden, Mass.), and through her niece, from Mrs. W. B. Griffin, better known to us as Miss Mahony (Chicago). No news came from John Kittredge, last known to be at Warren, Ohio. From men with the Class in the early years who did not graduate, appreciative letters came from J. M. Holder (Swampscott, Mass.), J. C. Kimberly (Neenah, Wis.), A. G. Keith (Cambridge) through his daughter, Theodora, M.I.T. '32, E. I. Marvell (Fall River), and J. E. Wray (St. Louis).

F. A. Schiertz was unable to write, having just been operated on at the Deaconess Hospital, but the secretary had been in contact through his nurse, and later through the attendant at the Elizabeth Carleton House in Roxbury, where Schiertz has lived for several years.

(The secretary hopes to quote from some of these letters in later notes.)

The sons of members present also spoke their thanks for the opportunity of sharing this pleasant event with their fathers. It happened that they, too, were graduates of M.I.T., as has been indicated. This added a happy note to the affair and their words were much appreciated. But more was to follow. As the end of the joyous evening approached, Charles Abbot arose, at a signal from the president, and presented to the secretary a magnificently hand-lettered parchment, and stated that its message would convey the thoughts of the members of the Class of '94. With some confusion, being taken completely by surprise, and it is hoped, with due modesty, the secretary accepted the scroll and attempted to express his very deep and cordial thanks for such a beautiful gift.

Most of us who were at the class dinner attended the impressive inauguration exercises at the Kresge auditorium on Monday, but unfortunately because of the stormy weather we did not again get together as a group. We were table companions again, however, at the luncheon in the gymnasium, so had one more opportunity for good fellowship before parting. Then came the departure of Crary and his wife for home, and possibly, others, including the secretary. At the banquet in the evening the Class was represented by Abbot and Mrs. Abbot, Hunt and his daughter, and Barton, but the secretary was unable to attend, much to his regret. So ended out 65th anniversary. — SAMUEL C. PRESCOTT, *Secretary*, Room 16-317, M.I.T., Cambridge, Mass.

'95

On August 12, Fred Harris changed his address from North Plainfield, N. J., to New Smyrna Beach Retirement Hotel, New Smyrna Beach, Fla.

January 1 of this year we had 30 living members. Today, September 15, we have 29, the majority living on the East Coast from Maine to Florida and Texas, two in California, one in Kentucky and one in Ohio.

Your Secretary decided to celebrate his 87th birthday three days ahead of time so they could have their son and his wife home from Litchfield, Conn., over Sunday, August 29. Everything went off well, thanks to the good wishes, cards, notes, and presents from many friends and classmates. — LESTER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass., A.D.F.; *Assistant Secretary*.

'96

The annual meeting of the Class was held at the luncheon on Alumni Day; present were Davis and Mrs. Davis, Driscoll and Miss Shanahan, Eynon, Miss Gates and Mr. Campbell, Pauly, Pierce, and Smetters. Secretary reported no drafts on the benevolent fund and general fund of $147. The secretary-treasurer and assistant were continued in office. Damon was expected to attend and Miss Shanahan had reserved a wheel chair for him; the inclement weather kept Fred in his Commander quarters. After the meeting we viewed the film made by Will Coolidge, showing actions at several '96 reunions, in the projection room in the Hayden Library. Jack Eynon's nephew, Stuart Eynon'13, and his wife joined us there. Jack had flown from San Diego and wrote on his return via jet (that left at 11 and landed at 1:30), that he enjoyed the trip and his lunch with Henry Hedge at the Country Club. Smetters had come from his 65th reunion at Northwestern. There were four of us at the dinner seated with a '97 group. Dawes '97 came from Hudson and of course knew Will Coolidge; he went to school with Will's sister, but had no more recent news from him than had we.

Mrs. Rockwell was in Europe when the Class met in June, so on her return the notes of the meeting and some roses were sent. Mrs. Rockwell writes: "Both notes and flowers came on the first anniversary of John's passing. It was good to know that he is still remembered by the class of which he was so fond."

Joe Harrington writes to the editor: "Am still well except for paralysis. Have a fine house on Harrington Park — eight years on Village Board — a grandson at Tech now. Good Luck." The copies of awards as a Modern Pioneer on the Frontier of American Industry, and articles as a Combustion Engineer and as an Advisory Engineer to Southern Coal Company, have been filed with the class records.

Last week at the third conference of class officers the President and Mrs. Stratton were talking with John Wilson, outgoing Alumni President; all the guests having gone, your secretary entered and was greeted with a most friendly, "I am Catherine Stratton," before John Wilson recognized and introduced me. The reception was quite as gracious as reported of Queen Elizabeth's reception of President Eisenhower. — JAMES M. DRISCOLL, *Secretary*, 129 Walnut Street, Brookline, Mass.; HENRY R. HEDGE, *Assistant Secretary*, 105 Rockwood Street, Brookline, Mass.

'97

There were eight members only to represent the Class at the luncheon in the Rockwell Cage on Alumni Day and this included three wives. Present were Mr. and Mrs. George Wadleigh, Mr. and Mrs. Jere Daniell, Judge Charles Dunn, William Binley, your Secretary and his better half. Walter Humphreys sat with members of the Corporation.

A smaller group attended the banquet in the evening.

A study of the class records revealed the minutes of 31 class meetings held during our undergraduate years. Also included was the constitution of the Class, signed personally by 348 members, which was formally accepted at a meeting held October 20, 1893.

Of even greater immediate interest were the minutes of a meeting held June 9, 1897 (the day of our commencement) at which John Collins was elected secretary and Gus Lamb vice-secretary — both for life. Thus the latter clearly became the legal secretary of the Class upon the death of John Collins in August 1954. In accordance with Jack's discovery, I am taking over as Class Secretary.

A letter from George Wadleigh dated July 31, East Bay Lodge, Osterville, Mass., contained the following of general interest: "Yesterday we drove some 12 miles to Allen Crocker's seashore cottage at Wanquart and were most fortunate to find them at home. Allen was hard at work repairing his front steps and was more than glad to see us. Last year we attempted a similar call, but found they had left for home in Rochester, N.Y. In 1957 we found them at home. Allen is an ardent salt water fisherman and my guess is that meat bills do not worry him. I think our next reunion might have him supplying the fish. He did not give a firm invitation. We spent a most enjoyable two hours. Allen has now retired from consulting work and has not been too well the past year, but my guess is that he

could wear out any of the bunch that were at '97's 60th.

"There is a possibility of my coming to the secretaries and agents meeting in September, but while very interesting and enjoyable I question if the incentive to my agency is sufficient to warrant M.I.T. the expense of my visit."

Following letter came from Fred Hunnewell — we hope he will tell us of the interesting incidents in the various places he visited:

"Our Japan trip, which you mentioned in the class notes last spring, materialized in fine shape and is now one of our happy memories. We traveled by rail and ship, but were impressed by the people we met who selected planes — quick arrivals, but not much to see en route on their world wide flights. We were in Tokyo two weeks, and Honolulu three weeks; shrines and rice paddys and people in Japan and leis and "hulas" and tourists in Hawaii. The trip to Pearl Harbor is a must at Honolulu. We were favored by fine weather, all the way, and were charmed by the climate of Oahu and the neighboring islands. Since our return, we have been catching up on reading — a year or so of Technology Reviews exhibits a series of fine articles on current problems, and points up how many years ago 1897 truly is. Called on Henry Loomis the other day, and talked with Proctor Dougherty on the telephone to keep in touch." — AUGUSTUS C. LAMB, *Secretary*, 61 Hillcrest Place, Amherst, Mass.

'98

The Class of '98 faces an interesting situation. There are 80 odd listed on the roster as living classmates. Some are still engaged in business; either personally or through an excellent organization or both.

The Class has recently lost several outstanding members, thus: the perennial Chairman of Reunions, Lester D. Gardner; dynamic and generous George T. Cottle; George Treat, Charlie Winslow, Elliott Barker and others who could be counted on to assist in keeping the Class together.

The situation has been complicated further during the past year by the indisposition of President Edgerly and of the Secretary. This has been considered with President Edgerly in letters and personal interviews; also with F. A. Jones, Alvan L. Davis and various officials of the Alumni Association.

It was considered advisable to hold a '98 class meeting at the earliest possible date to consider the situation and to take all necessary steps.

In the June '59 issue of The Technology Review, the Secretary explained his indisposition due principally to eye-trouble. Fortunately, this summer the difficulty seems to have been overcome; at least, sufficiently so that it seems permissible to start again with '98 news, commencing with the November, 1959, issue of The Review. We shall, of course, be obliged to go slowly.

We shall start with Alumni Day, June 15, 1959: All the features of this momentous occasion, despite inclement weather, were run off under the capable and foreseeing auspices of the Alumni Association, as described in the July, 1959, issue of The Review. The Class of '98 was represented by President Daniel W. Edgerly, Edward S. Chapin, Fred B. Dawes, Carl S. High, and Frederic A. Jones; also by Mrs. A. A. Blanchard, wife of our former Secretary, and Miss Marion L. Chapin, sister of the present Secretary, and Mrs. H. W. Jones, daughter of Frederic A. Jones.

President Edgerly came to the reunion all the way from Chicago, despite previous indisposition. Such devotion to the Class and M.I.T. is greatly appreciated.

F. A. Jones was appointed Assistant Secretary of the Class. We are happy to welcome this vigorous classmate to the Secretariat.

These notes are being written during the first week of September, in Kennebunkport, Maine, where the Secretary has been recuperating for the past two months. We expect to return to Marblehead, Mass., shortly; and to get in touch with Fred to consider ways and means to include in future notes materials that has been accumulating during the past year.

Those of you who have been kind enough to send excellent material to us will eventually have the satisfaction of seeing it among the notes; and those who have refrained from sending us significant data, suitable for notes, because of the indefiniteness of the situation, can now send it forward with assurance. And so, boys and girls of '98, rally 'round the flag and send in material to make the '98 notes interesting! — EDWARD S. CHAPIN, *Secretary*, 2 Gregory St., Marblehead, Mass., FREDERIC A. JONES, *Assistant Secretary*, 286 Chestnut Hill Ave., Brighton 35, Mass.

'99

Our 60th reunion came on Alumni Day, at which time the inauguration of Dr. Julius Adams Stratton as the 11th President of M.I.T. took place. This was a most impressive ceremony. Dr. Killian presided, and also at the luncheon which followed. With the 13 members of our Class attending, there were nine ladies. This was a happy affair due to the planning of our class President, Tim Kinsman, and the committee. The 13 members of the Class present represented 20 percent of the membership with which the Institute Alumni Association is actively in touch. Those who attended were William A. Kinsman and Mrs. Kinsman, Burt R. Rickards, Percy W. Witherell, Hervey J. Skinner and Mrs. Skinner, Miles S. Sherrill and guest, Mrs. Coryell, C. Gardner Barry and sister, Miss Barry, Carroll W. Brown and Mrs. Brown, David C. Churchill and Mrs. Churchill, George C. Glover and Mrs. Glover, Ralph H. Pinkham and Mrs. Pinkham, George H. Priest, Norman E. Seavey, Harry K. White and guest. On the following day most of those attending the reunion assembled in Boston at the University Club, which stands on the site where the engineering building was located when the Institute was in Boston. Here we started a bus ride around the section where M.I.T. was located when we were there. Michael Drew, a young man of M.I.T., acted as our guide, showing us the points of interest. In Boston many new buildings were seen in the Copley Square area and also the new campus of Boston University located on Commonwealth Avenue. As the bus wound its way in and out among the M.I.T. buildings, those who have not been frequent visitors at the Institute in Cambridge were amazed at the development which has taken place in recent years, the number of new buildings, and the extension of the campus toward the west. The bus made a stop at the Baker dormitory to give the group an idea of Tech's housing facilities. Another stop was made at the Karl T. Compton Laboratory where the wonderful IBM computer is located. The bus ride was certainly a high point in our reunion program. We were finally left at the Faculty Club, on the sixth floor of the Sloan building, which commands a fine view of the Charles River and the Boston skyline. Here a delightful luncheon was served. Professor Emeritus Samuel C. Prescott of the Class of 1894 was our guest speaker. He is the author of the book, "When M.I.T. was Boston Tech," which everyone should read, as it contains many of the happenings while we were in Tech. Dr. Prescott gave us an interesting talk, including some delightful reminiscences of Tech as we knew it.

Henry C. Eaton, of Peterborough, N.H., died on June 19, 1959, only a few days after writing our reunion committee his letter of regret. Details about Henry will appear in a later edition of The Review. — BURT R. RICKARDS, *Secretary*, 349 West Emerson St., Melrose 76, Mass. PERCY W. WITHERELL, *Assistant Secretary*, 84 Prince St., Jamaica Plain 30, Mass.

'00

As we reported in the July Review, so few of the Class would have been able to attend a reunion last June, that none was held. We hope that this means that many were omitting the reunion this year in the hope that they can come to our 60th next June. Let's all hold this in mind and see if we can have a large attendance at that time. Although we had no regular reunion, we did have a very satisfactory get-together on Alumni Day. Mrs. Newhall invited all who had signified their intention of coming to the Cambridge celebration to a breakfast at her home. Thirteen accepted her invitation, including six members of the Class. These were: Atwood with wife and daughter; Fitch and daughter; Patch and wife; Newhall and wife; Walworth; Ziegler; Mrs. Lawley, and the writer. It was a delightful occasion and we greatly appreciated Alice's hospitality. After breakfast, we had a short time before the Alumni program began, to visit the Newhall's beautiful garden and were amazed at the extent and beauty of the grounds, which are in the heart of Brookline. Most of those present at the breakfast attended the forenoon program and inauguration of President Stratton and met again at the luncheon. Patch and his wife were unable to do this but we were joined by Charlie and Elsie Smith and Stearns. The evening dinner was not so well attended by our Class but was enjoyed by eight of us. The whole day proved to be an interesting opportunity to renew old friendships.

Charles H. Hughes died on May 22, 1959, shortly after becoming ill at his home. Born in Boston 81 years ago, he was a Staten Island resident for 40 years, at 2681 Amboy Road, New Dorp. He was with us for two years in Course II. For a time he was associated with the Bath (Maine) Iron Works, the New York Shipbuilding Company and the Crescent Shipyard. For many years he had an office on William Street, Manhattan, and in recent years, he operated as a consultant from his home. During World War I, he was a technical aide for the U.S. Shipping Board, and in World War II, he did special work for the government. He was author of several books including "Hughes' Handbook of Ship Calculations and Construction" and contributed numerous articles to trade publications. Mr. Hughes was a member of the American Society of Naval Engineering, the M.I.T. Club of New York and the Oakwood Heights Community Church. Surviving are his wife, Grace C.; a son, Dr. Charles H. Hughes, Jr., of Garden City, L. I.; and two grandsons. The suddenness of his death is shown by the fact that he was present at the annual meeting of the M.I.T. Club of New York at the Biltmore

on April 28 and at his last class luncheon held monthly at the club, on May 4.

We have recently received word of the death on September 25, 1958, of Bertram C. Hopeman, a graduate in 1900 from Course IV. He was president of Hopeman Brothers, Inc., of New York City. Also Ralph Hamlin died on May 19, 1959. He was with us in Course I in our senior year having graduated from the University of Maine. — ELBERT G. ALLEN, *Secretary*, 11 Richfield Road, West Newton, 65, Mass.

'01

I have first to record the death of two classmates since the last class notes. Charles W. Danforth, X, 80 years old of Youngstown, Ohio, died June 22, of leukemia. He was one of our well-known members and attended reunions regularly. Recognizing the acute shortage of diamonds for industrial use, he devised a process to mine diamond abrasives from industrial waste products. This he did in his own laboratory. He founded his own company in 1924. Previously he was a chemist for Youngstown Sheet and Tube Company and the Old Sharon Steel Hoop Company. He graduated from Tufts College and attended M.I.T. for two years. He was a member of the First Unitarian Church, Sharon Lodge No. 250 F and AM, Norman Royal Arch Chapter No. 244, American Society for Metals, Wire Association and Industrial Diamond Association. Besides his wife, he leaves a daughter, two sons and eight grandchildren.

A clipping from a Rochester, N.Y., newspaper gives the information that Waldo G. Wildes, I, of that city died on June 27. He was 80 years old. He graduated in 1901 from M.I.T. and at one time was supervising engineer of the Delta Reservoir near Rome, N.Y. He retired about 1925. He was a past president of the Rochester Engineering Society and was a member of the Rochester Poetry Society contributing regularly to *The Gleam*, its publication. He was an Elder in the Third Presbyterian Church, a member of the American Society of Civil Engineers and the University Club. He leaves two brothers, several nieces and nephews.

As you all know, the Class held its 58th reunion on June 12, 13, and 14, at the Endicott House in Dedham, Mass. I shall not attempt here to reproduce the minutes of the reunion but will try and give the highlights of the occasion. The Endicott House, belonging to M.I.T., was a former millionaire's residence and was a most luxurious place to hold a reunion. It made such a hit with those present that it was voted to reserve the three days before Alumni Day for our 60th reunion in 1961. There were 13 of the faithful classmates present: Seaver, Hogle, Harry Allen, Boyle, Moore, L. D. Chandler, Ed Davis, Isham, Derby Bittinger, Willard Dow, and Taft. Friday night after supper, John Boyle entertained us with some of his experiences as a patent attorney in Washington. The weather was not all that it might have been. There were occasional showers but on the whole it was not too bad, as Saturday was mostly spent by groups getting together to talk over old times at Tech.

Saturday night our formal class dinner was held and was a worthwhile feast. After the dinner a class meeting was called to order. Respect was paid to 23 classmates who had died since the 1956 reunion. The secretary reported the minutes of the last reunion. He was instructed to send greetings, by way of these notes, from the reunion crowd to (a) their classmates in general, (b) their classmates in particular who sent regrets, and (c) their classmates who sent messages to be read at the meeting. A nominating committee brought in the following slate of officers to serve until the next reunion: President Edward H. Davis, Vice-president Willard Dow, and Secretary-Treasurer Theodore H. Taft. These were duly elected. President Davis then read one of his interesting poems, "The Octogenarian." After the meeting adjourned, Charlie Bittinger gave us an extremely interesting talk and showed us slides of paintings which he had made of different close-up views of the moon, some copied from photographs. This concluded the formal action of the reunion. Sunday morning was a time of departure and everyone left quite early.

Don't forget I want material for class notes. — THEODORE H. TAFT, *Secretary*, Box 124, Jaffrey, N. H.

'02

Alumni Day was not blessed this year with the traditional fair weather and most of the exercises were held indoors, but the installation of President Stratton set this day above the usual Alumni Day. Those present from our Class were Arthur and Mrs. Collier, Dan Patch, Ed Nelson, William Brown and myself. All but Brown remained for the entire program. Brown was unable to remain for the Pop Concert in the evening, as I would have been, had not the Colliers kindly offered to swing around through Salem and leave me at my home.

The following is clipped from the *Boston Herald:* "The will of Arthur T. Nelson of Chestnut Hill, greater Boston real estate investor and manager, who died May 4, left his entire estate to provide loan funds for promising students, it was revealed in Norfolk Probate Court, Dedham, yesterday. The document establishes the Arthur T. Nelson, Jr., Memorial Trust Fund in honor of Nelson's son, a graduate of Milton Academy and Yale, who was killed in action with the Army in the Philippines in 1945. Nelson's widow, Gertrude L. Nelson, is named executrix. College students, graduate students, high and preparatory school students are eligible for loans from the revolving type fund 'without regard to race, sect, color or religion.' The will recommends selection by a board of college administrative officers. The terms call for repayment of these loans as a moral and legal obligation. No estimate of the estate's value was given."

Last August Lewis Moore drove on a leisurely auto trip from Florida to visit old friends and acquaintances. While in this area he and Dan Patch came to visit your Secretary and we passed a very pleasant afternoon — there were no class affairs on the agenda. Patch and I have just had two days in Cambridge at the Conference of Alumni Officers. Many of you will already have received letters which were signed by Dan as class agent. We had an opportunity to learn what other classes were doing by direct contact with their officers. All agreed that it is difficult to get news from the members. I did learn, however, from Frank Robbins' brother that Frank is in good spirits, having fully recovered from a broken hip incurred in a fall about a year ago. — BURTON G. PHILBRICK, *Secretary*, 18 Ocean Avenue, Salem, Mass.

'03

After 34 years of active leadership in the Indianapolis Water Company, Howard Scott Morse, on April 30, 1959, announced his retirement as Chairman of the Board. A resolution by the stockholders on his retirement said: "He has without stint devoted his energy, wisdom, and experience to the advancement of the best interests of the company and of the community which it serves." An enviable record of an esteemed classmate.

Robert F. Manahan, III, died June 30, 1959, at the Valley Community Hospital, El Paso, Texas, after a long illness. He was born in Boston in 1878, the son of Thomas Scott and Ellen T. Manahan. He attended the Prince Grammar School, Harvard College, Class of 1900 and M.I.T. Class of 1903; also later Harvard and Stanford law schools. At the end of his freshman year at Harvard, his doctor discovered a lung ailment and recommended that he give up his studies for a while and live in Colorado. He found the climate there beneficial and obtained employment with an assayist in the Cripple Creek district. Finding himself completely recovered and with an interest in mining, he returned to Boston and entered M.I.T. After graduation he remained awhile as an assistant to Professor Richards. To acquire practical experience he worked in copper mines in Montana and in the goldfield mines in California. Returning to New England, he took a position with the International Paper Company, to develop a copper-mine residue process for bleaching. In 1909 he was with the Eustis Mines in Quebec. He later joined the American Smelting and Refining Company, with headquarters in El Paso, Tex. He specialized in mine title work, which he continued to engage in, long after formal retirement, until stricken by illness. He remained unmarried but surviving him are his sister, Mrs. Edith Ellen Aldrich, and his brothers, Edward W. and George K. Manahan.

Ernest A. Comer, XI, died July 2, 1959 at the York, Me., hospital, following a progressively worsening illness extending over several years. Born in Salem, Mass., February 14, 1881, to Charles J. and Mary Fuller Comer, he attended the Salem public schools and was graduated from M.I.T. in Sanitary Engineering. Following graduation he entered the stationery business, organizing the E. A. Comer Co. of Boston, Mass., of which he was president until his retirement in 1947. He married Annette Woodbury, also of Salem and after her death moved to York, Me., where he was active in Boy Scout and church duties, until failing health confined him to his home. He is survived by a sister-in-law, Miss Alice Woodbury, and several nieces and nephews.

Mrs. Martha Brookes Hutcheson, IV, aged 86, wife of the late William A. Hutcheson, died at her home at Merchiston Farm in Gladstone, N.J., July 23, 1959. She enrolled in 1900 in a course just started at M.I.T. — Landscape Architecture — and became one of the first women to practice the art in this country. Examples of her work are numerous throughout New England, New York, and New Jersey. She was a Fellow of the American Society of Landscape Architects, the author of numerous magazine articles and of the "Spirit of the Gardens." She was also a member of the National Society of Colonial Dames as a descendent of Sir Robert Tichborne, a colonel under Cromwell; a charter member of the Colony and Cosmopolitan Clubs of New York, and an honorary member of the Garden Club of America. Mr. and Mrs. Hutcheson were married in 1910 at Fern Hill, Burlington, Vt. She leaves behind her daughter, Mrs. Charles McKim Norton, and her two grandchildren.

Winthrop Chandler Avery, II, 80, a native of Clinton, Mass., died in Framingham, July 21, 1959. He was the son of the late George L. and Mrs. Caroline (Chandler) Avery of Lancaster. He attended the Lancaster public schools and after graduation from M.I.T. was in the employ of the Dennison Mfg. Co., from which he retired about five years ago. He was prominent in I.O.O.F. and A.F&A.M. circles and had resided in Framingham for the past 46 years. He is survived by his wife, Mrs. Bertha (Trumbull) Avery, a son, Robert C. Avery, a daughter, Mrs. William H. Oldach, and five grandsons, all residing in Framingham; also a sister, Mrs. Herbert H. Hosmer, of South Lancaster, Mass.

William M. Gilker was vacationing in New England this summer and while enjoying the sea food and ocean air, claimed that the air-conditioned apartments of Dallas, Texas, are preferable to eastern humidity in July. At the same time, your secretary was enjoying perfect weather at a Maine beach, but regretted missing an opportunity to see a visiting classmate. — LEROY B. GOULD, *Secretary*, 36 Oxford Rd., Newton Centre 59, Mass. AUGUSTUS H. EUSTIS, *Treasurer*, 131 State St., Boston, Mass.

'04

Summer has come and gone and some of you by now have probably headed for winter quarters in the south which means that our reunion on June 14 is a part of fast receding history. For the record, however, we are happy to say it was a very pleasant affair.

Those attending were: Warren Baton and daughter, Bernard Blum and wife, Daniel Comstock and wife, George Curtis, Frank Davis and wife, Fred Farrell, Cyrus Ferris and wife, Ralph Hayden and wife, Ralph Hayden, Jr., and wife, Charles Haynes, Carle Hayward and wife, Maynard Holcombe and wife, George Kaiser and wife and daughter, Harry Kendall, Currier Lang and wife, Frank Milliken and wife, Guy Palmer and wife, Edward Parker, Robert Phinney and wife, Farnum Rockwood, Eugene Russell and wife, Stan Skowronski, Arthur Smith, Robert Sosman and sister-in-law, David Sutton and wife, Leyland Whipple, Clarence Williams and wife.

In spite of the rain and the disappointment of the golfers, our private room at the Brae Burn Country Club was full of smiling faces. Most of us had attended our 50th and exchanged reminiscences of that grand occasion. Our ranks have been sadly thinned since then but those present at our 55th looked surprisingly fit for old timers. It was well worth the effort to have this reunion.

Greetings were read from several classmates who couldn't be present. Herb Kalmus is recuperating from a major operation; others have various infirmities which prevented attendance and some were attending graduation exercises of grandchildren at other institutions. Among the latter was Harry Rollins, who left soon after for a leisurely trip to Europe with his wife, Glendora. They were both present at our 50th and we missed them at Brae Burn. In lieu of attendance, Harry sent a check which helped to keep our depleted treasury solvent.

The Bob Phinney's not only attended the reunion but on the preceding Friday saw one of their sons get the M.I.T. degree. Another son is an M.I.T. student.

John Marston, who is living in Florida and nearly blind, had his wife write a condensed story of his professional activities since 1904. It was listened to with interest and was a reminder that most of us regardless of present infirmities have had many experiences which are pleasant to think about in our leisure moments.

At our brief business meeting the Class voted changes in our official family. Currier Lang was moved up from vice-president to president, replacing Carle Hayward who was elected secretary to succeed the late and sadly lamented Henry Stevens.

The class notes will continue to be compiled by the secretary and our ever genial treasurer. If you have any gripes or general complaints send them to the treasurer who will at once withhold the secretary's salary until the trouble is rectified. All other communications should be sent to the secretary.

Bob Sosman, who was among those present, has just published the 15th annual edition of his unique *Gustavademecum for the Island of Manhattan* and says he will be glad to send a copy of this guide to New York eating places to any member of the Class who requests it. His address is 117 West Dudley Avenue, Westfield, N.J. Those who attended our 50th received copies of the then current edition but the present edition is larger and up to date.

Most of those who attended our Sunday dinner at Brae Burn also took in the regular Alumni Day activities on Monday. The inauguration of President Stratton, the luncheon, reception, and late afternoon cocktail party had been planned for out of doors but the weather made this impossible. Moving them indoors reduced much of the glamor but they were all pleasant occasions, as was the dinner in Rockwell Cage and the Symphony in Kresge Auditorium.

The *New York Times* reports the death of Guy Riddell, Course III, on July 19, at Easton, Md., Memorial Hospital. Guy began his professional career with the American Smelting and Refining Company and became superintendent of their lead smelting plant at East Helena, Mont., where he made a reputation for new methods in sintering lead concentrates. He was loaned by the A.S.&R. Company to the large lead smelting plant at Port Pirie, Australia, to reorganize and improve the operations there. After leaving the A.S.&R. Company he carried on private consulting work which took him to Russia, Central America and other parts of the world. For a short time he was consultant for the United States Tariff Commission and later he was with the military government in Korea.

Course III has been hard hit in recent years. Shorty Holbrook, Paul Paine, Walter Hadley and Dwight Fellows, all present at our 50th, are now gone and Guy Riddell who was intimate with them all must be added to the absent list. The sympathy of the Class goes to Mrs. Riddell, his son and daughter.

The *Norwalk* (Conn.) *Hour* calls attention to three unusual trees on the estate of our newly elected President, Currier Lang. Fossil remains of the ancestors of one of these trees have been found in ancient rocks of Europe, Asia, and North America and were believed to have been extinct for 20 million years but recently specimens were found growing near Chungking, China. The tree is being reproduced in western soil by cuttings. It looks like an evergreen but its green needle-like leaves turn rosy pink and drop off in the fall. The tree, called the dawn redwood, grows to be 100 feet tall. The one Currier has is nine years old and is 10 feet tall. He has two other species of redwood trees which are rare in this part of the country. Some dawn redwoods are being propagated at Chequers, the summer residence of the British prime minister. — CARLE R. HAYWARD, *Secretary*, Room 35-304, M.I.T., Cambridge; EUGENE H. RUSSELL, *Treasurer*, 82 Devonshire Street, Boston.

'05

The editor of The Review tries to say it in a different way each September in his letter to the secretaries. "Send in your notes early, but make them short, so we may have plenty of room for the magazine articles." "A lot of short snappy items from many classmates." The Review has made a big improvement in making the magazine articles pertinent to M.I.T. but these are his "front page" and he has to feature them. My observations are that no secretaries get news from many classmates, also that 90 percent of the Alumni I have talked to turn first to class and club notes, obituaries, and The Trend of Affairs, and read their magazine articles elsewhere. So, send in your news, as voluminous as you will. I'll write them up and let the chips fall where they may.

You will probably read elsewhere in The Review a better description than I can give of the weather conditions on Alumni Day, 1959. It reminds me of one of my old minstrel show end-man jokes. "How are you feeling today, Mose?" "Me, oh ah'm feelin' like an old dead tree." "How's that, Mose?" "Punk!" But socially it was a grand success. Coming from Philadelphia were Frank and May Chesterman, from New Jersey (or from his farm at Powwow River), Harry Charlesworth. From local points were Court and Elizabeth Babcock, Gib and Elizabeth Tower, Andy and Mrs. Fisher, also their grandson, Andrew Fisher, 4th, Bert Files, Hub Kenway Henry Buff, Art Balkam, Gil Joslin, Bob McLean, Izzy and Mrs. Nye, Ruth and I and our daughter, Lucy, from Springfield. It was the first time in four months that we had left the sticks. The big city, plus the hottest June 10 ever, wore us down completely. One of the highlights of the luncheon was Bob McLean's place at the table, appropriately marked by a glass of milk. The table arrangements were perfect. All 21 of us were able, for the first time in memory, to be seated at the same table. Most of the above were present at the banquet and the Pops Concert in the evening. On my return home my enthusiasm was a bit dampened on reading in the local paper that I had gone to Cambridge to attend the 54th reunion of my class at Harvard. At the banquet Arthur J. Manson, Jr.'34 stopped by, introduced himself and promised to get his father here for our 55th. In September Ruth and I traveled across the state border to Cap Cod Hill, New Sharon, Maine, to attend the 50th wedding anniversary of Jo and John Ayer. The Ayers are enjoying their semi-retirement. John is still chairman of the board of Fay, Spofford and Thorndike. The golden wedding was a grand affair. Both John and Jo were in fine health and spirit and looking forward happily to their 60th. Of the classmates mentioned above, I know that Tower, Files, Kenway, Buff, and Nye are actively employed, but Bert threatens retirement in December. Incidentally, in looking up some history in our Ten Year Book, I read in Babcock's story of his first 10 years out, "How can a bachelor's existence prove interesting to the large majority of a class who have taken the fatal step?" That step, which he took a bit later seems to have been a very happy one.

In June the Hadleys drove up from Andover, Mass., for a brief visit, to renew acquaintances and to inspect the new '05 headquarters. In July Hub and Helen Kenway were here and in September Gib and Elizabeth Tower dropped in. Gib said that

on the way up they called on Roy and Andrea Lovejoy only to learn that Roy was then in the hospital for a hernia operation. The latest report is that Roy is getting along nicely. While Ruth and I were away, Win Taylor called at Hobby Knob, and left word he was vacationing in a nearby town. I tried to locate him by phone without avail.

Those world travelers, Ruth and Wallace MacBriar, wrote such an interesting letter on June 21 from Italy that I am quoting parts of it: "We flew from New York to Lisbon, Portugal, and spent some time in the Portugal countryside. (We had never been in Portugal before.) Then we flew from Madrid to Mallorca. Spent some time in Palma and various other places on the Island. (We had never been there before.) Then we flew to Barcelona and from there, flew to Palermo, Sicily, and visited several places on the Island. We were particularly interested in Sicily because our youngest son spent quite a time there during the war helping to bomb the Germans. He was in the Air Force, and went from Sicily to England. In all, he was in the war about five years, but luckily came out of it without a scratch. As you can see from our present locale, we are now in the Dolomites and expect to visit several interesting mountain villages before we leave them. Then we are picking up a car and driver, and driving through parts of Germany which we have not seen before, finally land-in Luxembourg. From there we shall take a plane to Brussels for a one night stand only, as we have been there before. From Brussels we shall take a plane to London to connect with a Boeing 707 jet to New York. We have flown on about every kind of plane there is, from puddle jumpers to DC 7's but we haven't been on a 707 jet as yet, so we thought we would try one to get home quickly."

My number one correspondent, Willard Simpson, writes so interestingly that I am quoting herewith pertinent parts of it.

"I wish I could be at the Alumni Day Celebration on June 15th, but that is right here now and I just can't go. I received an announcement from John and Joe Ayer of their 50th anniversary to be celebrated on the 24th and both Mary and I really would like to be up there and surprise them.

"We are pretty busy in the office and are just finishing a most exceptional building known as the Villita Assembly Building, built for the City Public Service Board, on their property, in the oldest part of San Antonio, really the part of town of the Alamo era, called Villita. It carries a Mexican name, but originally it was a German settlement. It covers about three blocks each way, right on the river bank. Our building is quite an exceptional type. The architect wanted a round building, and he did not want a dome to stand so high as to fade the other one-story buildings into insignificance, so he and I had read of a building where the roof was all hung on cables, and so this building has a cable roof. It is 132 feet in diameter with clear floor space. It has been christened just lately and is now in use.

"The roof is in the shape of a saucer with high walls and a low center because the cables hang from the top of the walls attached to a very heavy circular beam, and the 200 cables join another circular beam toward the center. These cables hold the entire roof up. The roof is a series of precast, lightweight, concrete blocks, 4000 of them, cut to fit in between the cables and attach the cables with hooks that have anchor use so that they won't slip.

"This kind of a hanging roof on cables, of course, is exceedingly flexible if nothing is done to it to prevent the flexibility. We accomplished the stiffening of the roof by loading the building down with a load of 50 pounds more per square foot than any load that would come on it, which stretched the cables about three quarters of an inch. Then we poured concrete in the spaces between the precast blocks and took the load off. The cables being stretched about three quarters of an inch were concreted in under high stress, and when the load was taken off, the cables reactivated against the concrete and put it all in compression which stiffened the whole roof, excellently.

"The architect, however, changed the interior appearance from the sagging cables and put a dome ceiling in there. So, all of our fancy structural work is hidden. This, however, is always the effort of the architect — to hide all structural features that an engineer places in a building and expose his own talents."

Our 55th reunion date is approaching, only 10 months away and the question is — when (during the month of June, 1960) and where. I propose that this be settled by a questionnaire, which is in the making and may reach you before these notes do. One of the things which made our 50th big and wonderful was the thought that there'll never be another 50th. In making your reservations for next June remember there'll never be another 55th.

The Lynn, Mass., *Item* of June 5, 1959, carried a story of a classmate, Laurence U. Fuller, in their "Bouquet of the Week" column:

"Mr. Fuller, a senior partner in one of Lynn's oldest insurance agencies, Thomas B. Knight and Company, at 23 Central Avenue, has given generously of his time and ability over the years in his capacity as treasurer and a director of the Lynn Home for Aged Women, a member of the Lynn Historical Society, a director of Lynn Hospital, the Boys' Club of Lynn, the Lynn Institution for Savings, a member of the Greater Lynn Chamber of Commerce, Greater Lynn Chapter, American Red Cross, Greater Lynn Community Fund and the Y.M.C.A.

"He began his business career in 1912, serving his apprenticeship with the insurance firm of Farquhar and Black, now located at 18 Central Avenue. In 1915, he was admitted as a partner in the firm of Thomas B. Knight and Company. During the 47 years of his insurance career, he has been active in Lynn and state insurance associations and has been a definite influence in setting the pattern for the business in this area. One of his basic philosophies is expressed recently in an interview with a writer for a trade paper: 'Survey your prospect's needs; that's the best way to get good business.' Mr. Fuller's early years were spent at the family home on Vine Street. His father, Charles S. Fuller, was a shoe manufacturer. His mother was the former Addie G. Usher. Mr. Fuller's uncle, Roland G. Usher, was mayor of Lynn for three terms, serving at the time the old city hall was built. Following his graduation from Haverford Academy in Haverford, Pa., Mr. Fuller attended Massachusetts Institute of Technology. Mr. Fuller is a widower and has no children. His wife, the former Annabelle Ingalls, died in October, 1939."

Changes of address: Alfred H. Kelling V, Apartment 2, 801 Southeast 4th Street, Fort Lauderdale, Fla.; Captain William A. Hall XIII, 28 North Evergreen Avenue, Clearwater, Fla.; Frank S. Elliott, 416 North 4th Street, St. Louis 2, Mo.

A clipping from the Fayette, Mo., *Advertiser,* September 23, 1958, gives us this obituary: "Mr. Bedford, 78, died at 6:50 P.M., Sunday, at Lee Hospital, after being a patient there since July 27. In ill health for an extended period, he had been in and out of the hospital a number of times in the last few years.

"A son of the late Leonora Payne Bedford and Edwin W. Bedford, he was born at the family home at 308 South Main Street in Fayette, January 26, 1880. After attending the Fayette schools and Central College, where he was graduated in 1901, he did four years work in science and engineering at the Massachusetts Institute of Technology, Cambridge, Mass., receiving his B.S. degree there in 1905. Then for six years he was a sales engineer at the Electric Storage and Battery Company in Boston and for six years was an electrical engineer with the American Steel and Wire Company in Worcester, Mass.

"While living in the East, Mr. Bedford was married to Miss Blanche McCoy, who died about a year after their marriage. After returning to Fayette Mr. Bedford served in the Missouri legislature as Howard County's representative, 1926-1928. He worked diligently for the establishment of the Missouri road system in the early days of highway building and was also one of the men who worked actively for the construction of the highway bridge at Glasgow.

"Mr. Bedford was past master of Fayette Lodge No. 47, A.F. and A.M.; past high priest of Chapter 94, R.A.M.; past commander of the Grand Commandery of Knights Templar of Missouri. He also was a member of Ferguson Chapter of the Order of Eastern Star of Fayette.

"Greatly interested in Indian relics, history, and archeology, he was one of the founders of the Missouri Archeological Society, served on its board and had been its president. Also, he was a member of the Central Missouri Amateur Astronomers Association, and of the Boonslick Historical Society. For a number of years he had been in the insurance business in Fayette and had continued this business until his death."

Edwin L. Smith VI died in Milwaukee, Wis., on December 17, 1957. Neither our Ten Year Book nor the Alumni registers of 1948 or 1955 tell us much of his life. Daniel Hine XIII of Chaplin, Conn., is reported as deceased but no date given. — FRED W. GOLDTHWAIT, *Secretary,* Box 123, Center Sandwich, N. H.; GILBERT S. TOWER, *Assistant Secretary,* 35 North Main Street, Cohasset, Mass.

'06

With greetings and the hope that all of you have enjoyed the summer, we start another year of contacts through these class notes as well as by letters, back and forth, and we do like to hear about your doings, your interests, your work, and your families. Marion and I didn't do any flying or traveling to far off places, but we did get to our favorite Maine beach; to Connecticut a few times to visit our son's family; to Cape Code briefly, and to Great Barrington, out in the lovely Berkshires. Among our house guests were a five and a half-year-old grandson and his nine-year-old sister, while their parents and older brother and sister were vacationing in Virginia for two weeks.

Several of the Class were "on tour." As mentioned in the July notes the Percy Tillsons VI were on their way around the world and may be home by now. Chester Hoefer I and Ruth were in Lebanon in July whence I received a card from Beirut, but they were not "in residence" at Longwood Towers by mid-September. Sherman Chase XI and Bertha had a three-week trip west in July, leaving New York with more than 100 others in special cars bound for the annual meeting in San Francisco of

the American Waterworks Association. It was a leisurely trip out via Banff, Lake Louise, and Vancouver, with stopovers, and while in Oregon I believe they helped celebrate the centennial of the state. At the annual meeting Sherman was made an honorary member, having been a life member for some years. Many of the members, like the Chases, took a week getting home with stopovers along the way at Grand Canyon, Yellowstone, and so on. In August they relaxed at Ossipee, N.H., for a couple of weeks with friends and in September they expected to attend the meeting of the Canadian Waterworks Association in Toronto. In October Sherman was to attend a meeting of the Consulting Engineers in Washington, where he doubtless met other '06 men and I hope to hear more about that later.

As these notes are in progress there comes a card from my coursemate Jim Banash VIII who, with wife Ceil, had made the polar flight and were doing Europe by air. "Too fast and not staying long enough in one place," he said. "Will know better next time." So why not profit by Jim's experience and stretch it out more? Our class president was on the move, too, probably in October, but Jim didn't go far! He is fortunate in having an older sister live with him, but they decided the house was too big, spent weeks on the impedimenta one accumulates during a lifetime, found a suitable new owner, and moved to an apartment at 7 Brooks Street in Winchester.

Early in the morning of June 15 — Alumni Day — we learned by radio that the investiture of Dr. Stratton would be held indoors, so Jim and I did not wear cap and gown in the academic procession but we did have seats in the reserved section in Kresge. The ceremony, as reported by picture and story in the July issue, was both impressive and interesting, and revealed careful and detailed planning. We later saw the elaborate setup in the Great Court where the ceremony would have been held if the weather had been kinder. At lunch, in the Cage, Jim and Marion and I were joined by George and Katherine Burpee, Tom and Georgiana Hinckley, Walter Davol, and Charlie Kasson. Because of the tremendous crowd, Sherman and Bertha Chase had to find seats elsewhere but joined us at the '06 table for the talks. Because of the inclement weather the "social hour" was indoors in the Armory (M.I.T. property and joined structurally to the Cage) where we were joined by the Burpees, Chases and Hinckleys. The A. B. Shermans also arrived, Bill Abbott brought his wife who had been shopping in Boston, and Charlie and Walter appeared. I believe Dr. and Mrs. J. H. Means also attended the banquet, which was tops as usual, and the Pops concert. It was a terrific and fast job, moving the doings from outdoors to indoors overnight, but it was well planned and executed and everything clicked.

George Guernsey I had told me last spring that he planned to retire as soon as someone was taken on to replace him, so I was not surprised to learn by our Wellesley *Townsman* of June 4 that he had. The Dana Hall *Bulletin* for May carried a fine likeness of George and the following sketch of his career: "No one on campus knows more of the history of the Dana Hall Schools than George Rockwell Guernsey of 7 Upland Road, Wellesley, who will retire this June after 40 years of devoted service as treasurer of the schools. He has been guardian of the vast and complicated accounting and billing systems and through his tireless hands have passed all monies received through the business of the schools and all funds solicited through the building and annual giving programs. A graduate of M.I.T. with the Class of 1906, he began his career as assistant in civil engineering at M.I.T., then spent some time doing reclamation work in Montana and Idaho before entering the bond house of Harris, Forbes and Company. After acting as purchasing agent for a ship-building business he joined the Dana Hall Schools as treasurer in 1919. Mr. and Mrs. Guernsey have three married daughters and eight grandchildren. They have made their home in Wellesley where he has always taken an active part in civic affairs, been an elected town meeting member since the inception of the limited town meeting, many times a deacon of the Village Church, member of the church choir for 25 years and on the church council, also served as president of the Village Churchmen. We will miss him on campus, but extend our best wishes for the future and a well-deserved leisure." So say we all, George and Elsie, and may you keep healthy and happy.

A later number of the *Townsman* reported the death on August 10 in Orchard Park, N.Y., of Mrs. Malcolm Wight (Alice) former resident of Wellesley (until his business took them to Hartford in 1939) and of Venice, Fla., after he retired, and where he passed on in 1956. The Wights had three children, Elizabeth Redmond, Willard M., and Francella Enke, and nine grandchildren.

The Alumni Association and Fund held the third annual Alumni Officers' Conference September 11 and 12, with '06 represented at some or all of the sessions by president Kidder, vice-president and class agent Chase, educational councillor Mike Gibbons from Dayton, and your secretary-treasurer. Also on the list of registrants were some 55 of the faculty, administration, and staff, with a total of 350 or so in attendance. As Sherm Chase was away Friday, Jim and I signed the first class agent's letters, most of them with a personal note. It helps the Fund office greatly if our contributions are sent in promptly so do it now — and thanks a million if you are helping on our 100 percent participation. We were around 60 percent last year, and many a mickle makes a muckle, you know.

Two deaths to report and a few address changes:

Ralph Carpenter Thayer III was born in Roxbury March 4, 1885, and his home address was Dorchester during our four years, and for the next 20 years or so as a mining engineer. In the late 1920's he was with the U.S. Engineers in Los Angeles, continuing with them until around 1940, when he retired but stayed in Los Angeles for a few years. Then came back to Westfield, Mass. He apparently alternated between New England and California for some years and then made his home in San Diego where he died March 28, 1959.

The Lawrence, Mass., *Eagle* of June 2 carried an excellent photograph and obituary of George Wilmer Hathorn, who was born in North Andover, January 19, 1883, attended the public schools there and was with us freshman and sophomore years. He also took special courses in chemistry at Lowell Textile Institute, where he taught chemistry for several years. Prior to his retirement in 1948 he was a chemist at the Lawrence Gas Company, for whom he established a chemical laboratory 51 years ago. He had always lived at the same address in North Andover and was a longtime member of the Congregational Church there. Wilmer died suddenly June 1 of a coronary thrombosis and is survived by his wife Alice (Hazelton) Hathorn.

Harold Clifford Elliott I was a resident of Wellesley for many years, retired a few years ago, and last spring moved to Arbutus Avenue, West Harwich, Mass. Samuel A. Greeley XI is still in Chicago but Greeley and Hansen are now located at 14 East Jackson Boulevard. Harold (Si) Young VI keeps moving around in the Foshay Tower in Minneapolis 2, and the last we knew it was No. 212. What's new with you? — EDWARD B. ROWE, *Secretary-Treasurer*, 11 Cushing Road, Wellesley Hills 81, Mass.

'07

Friday, June 12, 1959, was a red letter day on the calendar of many '07 men. It marked the opening of our 52d reunion at the Oyster Harbors Club at Osterville on Cape Cod. The Class had met there for reunions since 1932; and for the 19 men who took part in this reunion, it was like a homecoming. Don Church, manager of the Club, and his gracious corps of assistants did everything possible to make our stay memorable.

The Class of 1924 men celebrated their 35th reunion at the same time and place as 1907 and were most respectful to those who had been graduated 17 years before them. They showed much interest in our exhibition of class records, photographs, and archives. So that the noisy mealtime of this group would not disturb the serious mediations of the men of 1907, we were assigned a special dining area on the porch, over which our hostess, Miss Martin, kept a watchful eye and assigned two of her best waitresses to see that the "inner man" wanted in nothing.

Roy Lindsay took charge of the golf enthusiasts, who were few in number but strong in spirit. At all hours, various teams of '07 men could be seen on the course, striving to win the coveted little white spheres that Roy handed out to those who deserved them. Hud Hastings won two; Phelps Swett and his son, Phelps, Jr., each earned one.

The boat trip on Saturday afternoon was enjoyed by most of the men. Capt. Sollows brought around his new "Sea King," which is 48-feet long and equipped with diesel power. It was fairly rough out in the bay, so most of the trip was made on the inland waters.

The class meeting was held in one of the Club parlors and presided over by the Treasurer. He explained what had happened since the death of our faithful secretary, Bryant Nichols, last January and reported that Don Robbins had agreed to serve as Class Agent, succeeding Bryant. A verbal report was made about many of the absent members. We especially missed Sam Marx and John Frank. This is the first reunion John has missed, and Sam has now missed two. Don Robbins is our only member with perfect attendance at 13 reunions. The officers elected were: President, Don Robbins; Secretary and Treasurer, Phil Walker; Assistant Secretary, Tom Gould.

Your treasurer reported he started, after the 50th reunion, with $222.98. Receipts from class dues were $419, and expenses to June 10, $463.71, leaving a working balance of $178.27. (Anyone wishing a detailed report, please write the Treasurer.)

The financial statement of our reunion shows receipts, from payments for accommodations by the men who attended, of $741.80. We paid to Oyster Harbors Club, $684.88; for the boat trip, $75; and for postage and printing, $117, or a total of $876.88, so that this reunion operation showed a deficit of $135.08, which was made up from our class treasury. Our class statistics, carried on from Bryant Nichols' figures in our 50th reunion re-

port, show that of the 511 men who have comprised the total membership of our Class since 1907, we know the addresses of 233. Of the others, 237 are known to have died. Regarding 41, we have no positive information. Between our 50th and 52d reunion, 10 of our classmates died. At the present time I have an active class list of 151 members. It was decided not to print a revised list at this time, but to have such a list printed for our 55th reunion in 1962. I have several of the old lists on hand and will correct one to date and mail it to any class member who writes to me for one.

It was voted unanimously to hold our 55th reunion June 8 to 10, 1962, at the Oyster Harbors Club *without* wives.

The meeting concluded with Phil Walker showing his combined reel of colored movies, starting with our 35th reunion in 1942 and ending with our 50th and the presentation of the 1907 Mace at Alumni Day by Leverett Cutten. Most of the group remained in Boston for the Alumni Day festivities on Monday, June 15. As one of the older classes, we sat at a reserved table for the noon luncheon. The following were present: Mr. and Mrs. Gilbert Small; Mr. and Mrs. Anthony B. Arnold; Mr. and Mrs. Ralph G, Hudson; Don Robbins and Mrs. DeMerritt; Louis Freedman, Henry Martin, and Phil Walker. Again at the Alumni banquet in the evening, the group sat together, enjoyed the meal put on by Seiler, and then adjourned to the Kresge Auditorium, where a fine concert by the Boston Pops Orchestra made a fitting closing to a very pleasant and profitable weekend for the Class of 1907.

The wedding announcement, received late in June, was not a surprise to men who had attended Alumni Day. Don Robbins had as his guest for that day a very charming woman, Mrs. Sarah DeMerritt, who quickly made us feel we had known her for many years. Sarah and Don were married on Saturday, June 27, at the Central Congregational Church in Providence, R.I. They have an attractive house at 10 Stratford Road in Barrington. The Class extends to its President and his helpmate the very best of wishes for the years that lie ahead.

Jim Barker and Henry Martin very thoughtfully sent me newspaper clippings giving the announcement of the death of our classmate, Edwin Bonta, on July 17, 1959. He lived at 63 Sunset Ave., in Montclair, N.J. Ed was graduated as an architect in Course IV and attended our five-year reunion at Bellingham in 1912. He practiced in Syracuse until 1917, when he served as a Y.M.C.A. aide with our U.S. troops in Russia. In 1921-22, he practiced in Japan. After returning to America, Ed was an instructor in architecture at Syracuse University. During World War II he was associated with Gibbs and Cox, naval architects. At the time of his death, he was with the architectural firm of Walter Monroe Company of New York.

Ed was the author of "The Small House Primer" and articles on Japanese architecture and Russian peasant life. I promptly wrote Mrs. Bonta, expressing to her the sympathy of the Class, to which she replied, expressing her appreciation for our thoughtfulness of her and the family. I know she would appreciate a letter from any of the architects who knew Ed.

From the Alumni office I received a notice of the change of address of John H. Taylor, Course IV. I have no information in our secretary's files about this man. Can any of the Class help out? At present he resides at 7 Circle St., Marblehead, Mass. — PHIL WALKER, *Secretary and Treasurer,* 18 Summit Street, Whitinsville, Mass.; GARDNER S. GOULD, *Assistant Secretary,* 409 Highland Street, Newtonville 60, Mass.

'08

We held our 51st reunion at Melrose Inn, Harwichport, Mass., on the Cape, June 12-14. We had our 48th and 49th at the Melrose Inn so we felt at home. As in the past we had the beach house for our headquarters. The following classmates answered the roll-call: Bunny Ames, George Belcher, Bill Booth, Jimmie Burch, Nick Carter, Dick Collins, Ray Drake, Leslie Ellis, George Freethy, Sam Hatch, Karl Kennison, Howard Luther, Henry Sewell, Frank Towle, and Joe Wattles. We were favored with the following guests: Mesdames Ames, Burch, Drake, Ellis, Freethy, Hatch, Mayo, Sewell, Towle and Wattles. While a few arrived in time for lunch on Friday, most of us were on hand for dinner, which was bountiful as in the past. Following dinner we all joined in a song-fest with Dick Collins at the piano. You know we are improving and gave quite a concert, judging from the remarks of some of the Inn's guests. As befits septuagenarians we adjourned about 10:30 P.M. and "so to bed."

We received regrets from Charlie Steese, who missed his first reunion in some time. He wrote as follows: "Hello everyone at the reunion. Today should be the time for us to leave Carlisle en route to join you on Friday but I regret that we must miss the gathering of the Class this year.

"Mary will have completed one month in the hospital today and is convalescing very well without other complications having arisen. Yesterday was her first walk under the trees outside of the hospital and we hope that she will return home this weekend.

"We had planned to attend this reunion, and after a few extra days on the Cape, go West to Vancouver, British Columbia, and then north about 300 miles to the Cariboo country to visit a daughter. So we are quite disappointed not to be able to join you this year. Our best wishes go to you for an excellent weekend and with the hope that we will be able to be with you next year."

Also from Harry Rapelye: "I am just reaching the end of five weeks of invalidism, associated with some rather severe surgery. It does not look to me as if I would be up to Harwichport for the 55th reunion. As evidence of good faith, I enclose a check and will hope to do better next year." We certainly missed Harry leading our singing and his famous "Alouette." Dick Collins telephoned Harry from the beach house to let him know we all missed him, and hoped for his early recovery.

Jim McGowan wrote as follows: "Sorry to write that I'm going to miss all the doings at this year's M.I.T. graduation, inauguration, and class day ceremonies. But some day in the sweet by and by — I'll be there! Nothing has happened to me in the past year which is worthy of note. I did pay my 50th annual dues to the Franklin Institute and forthwith received a miniscule gold key and citation — which pleased the membership committee. For your amazement I enclose a copy of the life histories of the four recent additions to the roster of the 19 Gold Members (out of a total membership of some 7,000). They omitted the first job I had after leaving M.I.T. — four months on Beacon Hill as assistant to Simeon C. Keith, biochemical engineer. Best regards to you, and to those who are lucky enough to get to Melrose Inn for our 51st."

Ralph Batchelder wrote: "I am sorry to say that I will not be at the reunion in June, much as I would like to be. My wife and I are not going East this year as our daughter and granddaughter are going to spend the summer with us. We will probably go East next year and if you have a reunion then I hope to take it in. You will remember that I had a cataract removed from my right eye last year. Well, I had one removed from the left eye in February. I got my new glasses last week and now have 20/20 vision in both eyes. I have been very fortunate. The operation is not bad, no pain or discomfort, but it threw my whole system out of whack and I am just beginning to feel myself again.

"I haven't seen Harry Bentley for several months but will soon. Heard recently from Frank Sharman, who is well. Thanks again for your letters and the fine photo of the reunion crowd. Give my best regards to all classmates including yourself."

While it rained a little Friday night, Saturday was pleasant and between meals we did as we pleased; the ladies shopping in the village, while others toured the Cape seeing friends. Some of us visited Snow Inn where '09 was holding their 50th.

At the cocktail hour before dinner, Saturday night, Dick Collins served us fresh oysters which he had captured that morning. We missed Margaret Collins' special cocktail sauce, also Edith Belcher's cheese biscuits. The girls had a good excuse as they were celebrating their 50th at Wellesley. However, our refreshment committee had done all right in providing hors d'oeuvres.

About 7:00 P.M., we adjourned to the dining room at the Inn and ate probably more than we should. After dinner there was more "singing" and then Joe Wattles showed some fine colored pictures, with sound, which were enjoyed by all. Sunday, most of us started for Boston after lunch, feeling that our 51st was a success and looking forward to our 52nd, next June.

Monday was Alumni Day at Cambridge as well as the inauguration of Dr. Stratton '23, as 11th President of M.I.T. On account of the weather the inauguration took place in Kresge Auditorium and the luncheon in Rockwell Cage, while the cocktail hour was held in the Armory.

Present from '08 at the lunch or banquet were Bill Booth and Mrs. Reynolds, Jimmie and Mrs. Burch, Nick Carter, Henry and Mrs. Damon, Leslie and Mrs. Ellis, Mrs. Harold Gurney, Leo and Mrs. Loeb, Howard Luther, Miles Sampson, and Frank Towle.

Following the banquet, we moved on to Kresge Auditorium for a concert by Arthur Fiedler's Boston Pops Orchestra, a fitting climax for a most enjoyable Alumni Day. Understand Carl Bangs of Rome, Ga., spent some time on the Cape in August. Hope he was able to see some of the '08er's located there. Leslie Ellis, George Belcher, and Nick Carter attended the third Alumni Officers' Conference at M.I.T., September 11 and 12. Some 300 men were there. It was most interesting and well worth while.

Dick Collins underwent surgery at Hyannis Hospital, August 23, and has been convalescing at his home in North Eastham, Mass., since early Sept. I know he would appreciate hearing from any of you. Why not drop him a get-well card. Received a card from Waldo Morrison, late in June, saying: "Recently, we returned to our home in Stowe, Vt., after six months in Florida and the British Isles, touring in a small Ford car."

Remember our first dinner meeting of the 1959-1960 season will be held at the M.I.T. Faculty Club, 50 Memorial Drive, Cambridge, on Wednesday, November 4, 6:00 P.M. We would be glad to see you

there. — H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban 68, Mass.; LESLIE B. ELLIS, *Treasurer and Assistant Secretary*, 230 Melrose Street, Melrose 76, Mass.

'09

Our 50th anniversary has come and gone and in spite of the inclement weather which prevailed most of the time, everything ran smoothly and, so far as we can judge, it was all a grand success.

The activities began Friday morning, June 12, when we all met in the Armory and donned our caps and gowns. This was an important occasion for it was here that we had our first opportunity to meet our classmates and renew old acquaintances, some of whom we had not seen for years. Led by Molly, marshall of the Class of 1909, we marched with the academic procession to Rockwell Cage where space on the platform, close to the rostrum, was reserved for us. We witnessed the commencement ceremonies over which James Killian, Jr., presided. There were inspiring addresses both by him and John Cowles, President of the *Minneapolis Star and Tribune*. President Julius Stratton awarded the degrees.

This was followed by the commencement luncheon held in Du Pont Court, where, as members of the 50-year Class, we were special guests of the president. The Class was highly honored in that both Tom Desmond and Molly were guests at the head table, Molly as president of the 50-year Class. Tom spoke in behalf of the Class, eulogizing the M.I.T. teaching staff and expressing confidence for the future of M.I.T. (A picture of Tom, with Mrs. Killian and Dr. Stratton, appears in the July Review, page 494. Also see page 542.) In that portion of his remarks addressed to the 50-year Class, President Stratton stated that many had attained distinction and he particularly mentioned Tom Desmond, Brad Dewey, and B. Edwin Hutchinson, all of whom are life members of the Corporation.

The luncheon was followed by a reception given by President and Mrs. Stratton but in order not to be late in arriving at Snow Inn most of the class members were obliged to forego the pleasure of attending. The greater portion of the Class arrived at Harwichport before dinner and for the most part were quartered in the Captain's Cottage and the Tower Cottage which were wholly reserved for '09. Others stayed in the main house. The evening was left free so that the members of the Class had opportunity to meet one another, become reacquainted and talk over old times as well as the present.

On Saturday, the weather was not propitious for outdoor activities since it was cool, windy, and foggy. However, many did stroll around the premises and along the shore and a few managed to do some bowling on the green. The Class of 1939 was holding its 20th anniversary at the Inn simultaneously but the accommodations were so ample and the planning was such that there was no noticeable interference between the two classes. In the late afternoon it began to rain, which prevented further outside activities as well as the taking of a group photograph. At 6:00 P.M. there was a cocktail party and social hour, followed by the class dinner which was held in the main dining room. We then adjourned to the Clam Bar, a separate building, where the business meeting and further activities of the Class were held. Since the weather had prevented the taking of a single group photograph outside, it was decided to divide the Class into three groups and take a photograph of each at one end of the meeting room. These photographs came out unusually well. If any attending the meeting who did not order any, or others who could not be present, wish one or more of the three photographs, they may be obtained by writing to Francis M. Loud, 351 Commercial Street, Weymouth 88, Mass. A list identifying each person will accompany the photographs.

Because of the lateness of the hour, the talk by our guest speaker, Dr. Van Bush, who is also an honorary member of the Class, preceded the business meeting. His remarks were devoted to the Russian situation. In his opinion, so long as the West remains adequately armed, Krushchev will never carry his demands to the point of an armed conflict but will press matters up to this point. As a warning he emphasized the fact that the U.S.S.R. is making tremendous advances in science and engineering. This is all supported by the comprehensive educational system, with emphasis on science and engineering, which has been developed. Another contributing factor is that U.S.S.R. scientists and engineers have almost unlimited freedom, sometimes greater than in the United States, which makes them a privileged segment of the population.

A business meeting followed. In his introductory remarks, Molly first read a message from our vice-president, Tom Desmond, regretting that because of the indisposition of Alice, who was obliged to remain at their hotel in Boston, he would be unable to come to Snow Inn. Molly then expressed his appreciation of the confidence of the Class in affording him the opportunity to serve as its president and his deep regret that Carl Gram and Jim Crichett could not have lived to share our 50th reunion. He added that he and, he believed, everyone else attending the reunion had had a wonderful time and on behalf of the Class he expressed appreciation of the contributions to that end by secretary Chet Dawes, Frank Loud, and the other members of the reunion committee, and Art Shaw and the other members of the 50th anniversary gift committee.

Francis Loud, chairman of the 50th anniversary committee, then reported the attendance. There were 81 persons registered at Snow Inn, 43 members of the class, 27 wives, 4 widows, and 7 others, such as sons, daughters, and other relatives. There were 15 others who either lived on the Cape or stayed elsewhere of whom 7 were class members, 5 wives, and 3 others. There were 5 who were at Cambridge only, 4 class members and one other. This makes a total of 54 class members, 32 wives, 4 widows, and 11 others, a grand total of 101. Francis then read extracts from some of the letters of those who were unable to attend. (Part of these appear further along in these notes and others will appear in subsequent class notes.) Art Shaw, class agent, reported that the total of the 50th anniversary gift was $132,794.62, which included the class memorial fund of $4,693.00, contributed by several widows. Also of interest was the fact that since 1940, the beginning of the Alumni Fund, the class contributions had amounted to over $320,000.00. The class secretary reported that the contributions toward the expense of the anniversary had been very generous, amounting to about $527.00 which, added to the funds already in the bank, amounted to well over $800.00. All the expenses of the anniversary are not yet known but in any event there will be a comfortable balance for future needs.

The nominating committee, consisting of Art Morrill, chairman, Joe Parker and Henry Marshall, reported the nomination of Maurice R. Scharff, president; Thomas C. Desmond, vice-president; Chester L. Dawes, secretary; George E. Wallis, assistant secretary. The Class accepted the report of the committee and voted unanimously to elect these officers. Chet Dawes then told of his experiences in Russia the year before when he attended the meeting of the International Electrotechnical Commission as a U.S. delegate. The lecture was illustrated with Kodachrome slides and most appropriately followed Dr. Van Bush's remarks. Chet also observed the rapid advances that the Russians were making in education, science, and engineering. Steve (J. Newell Stephenson) then played a recording of an interview of the late Dr. Charles Camsell'09, XII, who had contributed so much to the development of western and northern Canada. (See class notes, March, 1959, Review.)

During our stay at Snow Inn, George and Marcia Wallis, Austin and Polly Henderson, and John and Margaret Davis visited Mrs. Critchett at her home in Orleans. She was more than pleased to be remembered.

Rain prevailed all day Sunday. The morning was spent socially in the rooms of the main house during which photographs taken at former reunions were on display and Steve played the second recording of the Charles Camsell interview. On account of the heavy rain nearly everyone departed right after dinner, although a few stayed over until Monday morning. All seemed highly satisfied with their accommodations at the Inn and were most appreciative of the efforts of the proprietors, Frank Thompson, his wife, and his mother, for their hospitality, graciousness, and the extra efforts which they made to assist in the conduct of our many activities.

Monday was Alumni Day and as the weather continued to be cold and uncertain, it became necessary to hold the inauguration of President Stratton in Kresge Auditorium rather than outside in the Great Court as had been planned originally. This necessitated the cancellation of the inauguration procession in which Molly and Chet Dawes were to march as our two class representatives. (Accounts of both the inauguration and commencement will be found in the July Review.)

After the inauguration we all adjourned to the luncheon in Rockwell Cage where we were privileged to sit adjacent to the head table. About 5:30 P.M. cocktails were served in the Armory preliminary to the Alumni dinner which was also served in Rockwell Cage. At the conclusion of the dinner a brief business meeting was held during which Molly announced to President Stratton that the Class of 1909 was presenting to the Institute the sum of $132,794.62 as the 50-year gift. The Alumni meeting then adjourned to Kresge Auditorium, where a section was especially reserved for the Class, to attend the Pops Concert given by the Boston Symphony Pops Orchestra under the direction of Arthur Fiedler. The excellent music was enjoyed by all. With the singing of the Stein Song at the conclusion of the concert the program of our happy 50th anniversary, which we had been looking forward to for a long time, came to its conclusion. It was a memorable event which we all will remember with great satisfaction.

Those attending by courses were as follows: I — Howard W. and Ruth Congdon, Thomas C. Desmond, Bernard R. Fuller, Gordon M. Gilkison, Austin B. and Pauline Henderson, Samuel N. and Margaret McCain, Edward D. and Florence Merrill, Joseph W. Parker, Benjamin W. and Esther Pepper, C. Weston and Mrs. Radford, Arthur L. and Betty Shaw, Lock-

wood J. and Helen Towne. II — John F. and Margaret Davis, Mrs. Benjamin (Margaret C.) Dow, W. Craig Ferguson, Howard C. and Caroline Fisher, Mayo D. Hersey, Carlton D. and Elise Jacobs, Henry H. and Constance Marshall, Mrs. John W. and Miss Eleanor Nickerson, Henry K. and Madge Spencer, Raymond B. and Marion Temple, Mrs. Jean Temple Hall (daughter) and Miss Patricia L. Hall (granddaughter), Albert E. Thornley, George E. and Marcia Wallis, Melville K. and Helen Weill, John A. Willard and Mrs. Bertha W. Davis (sister). III — Denison K. and May Bullens, George E. Hodsdon, B. Edwin Hutchinson, Robert M. and Catherine Keeney, Thurston C. and Louise Merriman, Francis H. Soderstrom. IV — Lester H. and Louise King; Miss Florence H. Luscomb. V — Mrs. Cora B. Gross, Leon J. and Ruth C. Healy, Laurence C. and Florence Shaw. VI — Chester L. and Muriel Dawes, Mrs. Lewis H. (Blanche W.) Johnson, Ralph (son) and Mrs. Betty Johnson Sexton (daughter), Francis M. Loud, Kenneth S. May, Haylett and Ethyl O'Neill, Harvey S. Pardee and Mrs. Ruth P. Gomulicka (daughter), F. Gardiner and Helen Perry, Dwight W. and Glenna Sleeper, Harold O. Stewart, Harry E. Whitaker. VIII — Franklin L. and Dorothy Hunt. IX — Henry C. Colson. X — Elliot Q. Adams, R. E. Blankenbuehler, Bradley and Marguerite Dewey, Mrs. Carl W. (Hazel) Gram, J. Newell Stephenson. XI — George I. and Olive Emerson, Arthur B. and Georgia Morrill, Arthur B. Morrill, Jr., (son) and Mrs. Arthur B. (daughter-in-law), and Mrs. Russell L. Test (sister-in-law), Maurice R. and Jeanne Scharff. XIV — Earl R. and Katherine Hamilton. Honorary member and guest speaker, Dr. Vannevar Bush.

We were more than pleased that four widows, Mrs. Benjamin Dow, Mrs. John W. Nickerson, Mrs. Lewis H. Johnson, and Mrs. Carl W. (Hazel) Gram, some with members of their family, were able to attend. The first prize for distance goes to Art Morrill who came from Caracas, Venezuela. Harvey Pardee and Haylett and Ethyl O'Neill should receive honorable mention as having come from California and Texas, respectively.

In an earlier Review we stated that Phil and Mrs. Chase left in April for an extended tour of Europe which prevented their attending the anniversary. The Secretary and Muriel were with them for nearly two weeks in early July in Madrid where we attended the meeting of the International Electrotechnical Commission. Phil was formerly vice-president of the United States National Committee which sponsors the I.E.C. in this country. He is now a member at large.

Because of space limitations few excerpts from replies of some who were unable to attend follow. Others will appear in later numbers of The Review. George Gray, VI, one of our most faithful members, writes from Natick, Mass.: "For the past two months I have been somewhat out of gear and, much as I regret having to say so, the trip seems a bit too risky. . . . My heartiest greetings to you and other '09ers who may remember me and my best wishes for a 100 percent successful reunion." (A summary of George's career appeared in the class notes for July, 1957.)

Bob Glancy, VI, who with Violet was present at the 45th, writes: "The old saying is still true: 'Man proposes and God disposes.' I had fully expected to meet my old classmates on the Cape but recent events have been such as to require my presence at home with my wife. Arthritis is a mean affliction and can hit hard out of a clear sky. At any rate, I have concluded that pleasure will have to be foregone on this occasion. As to my status, it is easy to report. I retired from telephone engineering in Pennsylvania and Delaware in 1953. We have a colonial style house built on 1.3 acres about 14 miles west of Philadelphia City Hall and live on one floor with a spare room and bath upstairs. I do no real brain work but spend the bulk of my time outdoors trying to make things grow in spite of fungus, insects, rabbits, drought, and so forth. It is one way to acquire a coat of tan without going to the shore, but I often feel the need for a spare back in spite of working at a leisurely rate. This year I learned what 'tendonitis' is. I am glad that it didn't come any sooner. Well, this is one way to enjoy life for a person of my tendencies and I am content. Kindest regards to everyone, particularly the men of Course VI."

Well deserved tribute has already been paid to Francis Loud and his committee for their efforts in making preparations for and conducting the anniversary so successfully. However, Francis' work has continued in classifying and recording names, answering correspondence, identifying those in the photographs, and so on. In addition, he devoted much time in assisting the secretary in the preparation of these notes for which we should all be grateful. Molly, Art Shaw, and John Davis also made valuable suggestions.

We received a letter from William Tallman'15, IV, notifying us of the death in Pasadena, Calif., on May 14, of Kenneth E. Carpenter, IV. Later a letter from his brother, W. Clayton Carpenter from Denver, Colo., gave many details of Kenneth's career. He was educated in the public schools of Pawtucket, R. I., attended the Rhode Island School of Design and then the Institute. In 1912 he won a fellowship for three years study at the American Academy in Rome. He served in a civilian engineering capacity in World War I. In 1920 he went to California where he entered a career of architectural design, at different times being connected with several prominent firms. He was considered a very successful architect and, with his associates, designed many large residences, some having special and luxurious appointments. Funeral services were held in the All Saints Episcopal Church, Pasadena, Calif. — CHESTER L. DAWES, *Secretary,* Pierce Hall, Harvard University, Cambridge 38, Mass. *Assistant Secretary:* GEORGE E. WALLIS, Wenham, Mass.

'10

Since June, I have received notices of the deaths of the following classmates: Charles E. Creecy on January 29, 1959; John J. Higgins, August 17, 1958; Ralph W. Perkins, June 25, 1958; Professor Hale Sutherland, May 22, 1959; and Myrton J. Turnbull on June 28, 1959. It has been some time since I have heard from any of these former classmates with the exception of Mert Turnbull. He and his wife regularly attended the annual Alumni Day festivities and were present this year and it was a shock to hear of his death less than two weeks later. The following is from the *Hartford Courant:* "Myrton J. Turnbull, former superintendent and director of the Merrow Machine Company for 29 years, died Sunday morning at his home, 18 Paxton Road, West Hartford. He was 75. Born in Simsbury, he lived in West Hartford for 27 years. He was graduated from Hartford Public High School in 1904 and the Massachusetts Institute of Technology in 1910 with a B.S. degree in mechanical engineering. Mr. Turnbull served his apprenticeship and received his toolmaker's certificate from the Pratt and Whitney Company, Inc., of West Hartford. He was assistant to the president of J. G. Brill and Company, Philadelphia, and work manager for the Whitcomb Locomotive Division of the Baldwin Locomotive Company of Rochelle, Ill. Mr. Turnbull played the cello with the Philadelphia Symphony Orchestra. He was a communicant and former vestryman of St. James Episcopal Church, West Hartford. He was a member of the M.I.T. club, a veteran of World War I and served as an officer in the engineering corps. He was discharged with the rank of major. He leaves his wife, Mrs. Etta R. Young Turnbull; a son, Donald E. Turnbull of West Hartford; several nieces and nephews and two grandchildren."

There was a goodly representation of classmates at the Alumni Day in June; those attending were Jack Babcock, Roy Briggs and wife, Bob Burnett and wife, Dudley Clapp and wife, Allen Curtis, Art Curtis and wife, Russell Hastings, Ralph Horne, George Lunt, Hal Manson, Murray Mellish and wife, Mert Turnbull and wife, Richard Tyler and wife, Charles Wallour, and your Secretary and his wife. It was the regular attendance with the exception of Professor Tyler and his wife who is now retired from the University of Washington and has not been east for many years.

Carroll Benton's report on the New York City class luncheon follows: "At our last monthly luncheon held on June 17 (which by the way was Bunker Hill day up around your neck of the woods) nine classmates were present, namely: Gordon Holbrook, John Holbrook, Al Hague, Larry Hemmenway, Fred Dewey, George Magee, Henry Schleicher, Jim Tripp, and your reporter. The usual bunch, you will note, with the possible exception of John Holbrook who has not heretofore been able to attend regularly. Ray Jacoby, unfortunately, has been laid up with a heart condition for some time, having just recently returned home from six or seven weeks confinement in the hospital. I talked with Ray today (June 29) and was happy to learn that he was coming along fine. He said that they had recently moved to a ranch-type house in the next town and consequently he would not have to climb stairs any more. His new address is 6 Pleasant Terrace, Bounton, N.J.

I understand that Frank Bell was in town and had lunch with Fred Dewey before our May luncheon. We were sorry he could not stay in town for the latter." — HERBERT S. CLEVERDON, *Secretary,* 120 Tremont Street, Boston, Mass.

'11

This year about the same number of our classmates and wives attended the Alumni Day as were present last year. The 17 men plus 4 ladies included: Ralph and Mary Adams, John and Margaret Alter, Bill Coburn, Luis de Florez, Henry Dolliver, Tom Haines, Fred Harrington, John and Mabel Herlihy, Roger Loud, Franklin Osborn, Chester Pepper, Carl Richmond, Don Stevens, O. W. and Gertrude Stewart, Ed Vose, Emmons Whitcomb, and Erv Young.

Our sympathy to Henry Dolliver, I, whose wife passed away early this summer. Henry was with us on Alumni Day and mentioned that she was not in the best of health.

We also have to report the sudden death of Ralph Adams, II, on July 17. The following is from the *Boston Herald:* "Ralph G. Adams, 69, of 27 Grant Street, Needham, dean of the Franklin Technical Institute and professor of mechanical engineering at

Lowell Institute of Technology, died yesterday at his summer home in Freeport, Maine. He was born in Needham and was graduated from Massachusetts Institute of Technology in 1911. He was a past master of Norfolk Lodge of Masons in Needham. Mr. Adams leaves his wife, Mary; a son, Ralph G., Jr.; a daughter, Mrs. Victor Gatto; and two brothers, Rodney S. and George A." Ralph and Mary attended all the events on Alumni Day and we had a chance to chat with them at luncheon and dinner. The Class was represented at the funeral by Maurice Lowenberg, VI, who writes: "Since my retirement from Stone and Webster, I have been associated with Ralph at Franklin Technical Institute, where he was loved and respected by all. No better man ever lived."

Another death is reported. Harry L. Manley, I, of 112 Lafayette Avenue, Passaic, N.J., died on May 15, ten days after an operation. The following is from the *Newark Evening News:* "Mr. Manley, who was regarded as the dean of research directors of department stores in the United States, was born in Lawrence, Mass., and had lived in Passaic 35 years. He graduated from M.I.T. in 1911. During World War I, he was a captain with the American Expeditionary Forces in France. Mr. Manley had been employed by Abraham and Straus since 1919 as a research director and had been economic advisor to the firm since 1957. He was a member of the Associated Merchandising Corporation of New York, the National Retail Merchants Association, and the panel of the American Arbitration Association. He leaves his wife, Marie; a son, Fred A.; a daughter, Mrs. Walter Lissiuk; a brother, Bertram B.; a sister, Mrs. Joseph Taylor, and five grandchildren.

Carl Richmond, I, wrote from Snow Inn early in August that Helen and he were at our reunion headquarters of recent years. He reports: "The Tower House and the Beach House have been enlarged and there have been a number of improvements since June, 1956. The Thompsons now also own Kimballs at Cohasset, Truro, and a couple of other places on the Cape."

Mabel and I spent part of the summer at North Conway, N.H., and while there drove over to Cornish, Maine. At Wellsweep, we found Sara content and busy with her garden. She sends her love to those who autographed the Alumni Day program, sent her by the 1911 luncheon group, and wishes to thank the Class for "all the nice things done for Dennie and all the notes and messages I have received."

In a note from Phil Kerr, II, about the Dennie Fund he promises: "I am going to write you a letter one of these days." Surprise me Phil!

Thanks to Jim Campbell, I, we have a clipping from the *Cast Iron Pipe News* reporting the election of Bill Orchard, XI, as treasurer of the American Water Works Association, for a third term. It says: "William J. Orchard, a resident of Maplewood, N.J., continues as director and consultant for Wallace and Tiernan after nearly 39 years as general manager. His membership in A.W.W.A. goes back to 1917. He helped organize the New Jersey section. He is also a past president of the Water and Sewage Works Manufacturers Association."

Also from Jim is a page from the July issue of the *Architecture and Engineering News* with a large spread covering the withdrawal of Ralph Walker, IV, and Stephen Vorhees from active partnership in their firm. In addition to a list of professional honors "that crown the efforts of a brilliant and highly purposeful career," the article mentions the governmental decorations of Chevalier, Legion of Honor of France; and Officer, Order of the Crown, Belgium. The article concludes: "Walker has served on many presidential advisory committees and UNESCO delegations, in addition to participating on important trusteeships, directorships, and holding professional memberships. Recently, President Eisenhower appointed Walker to membership on the Fine Arts Commission. Architect, author, and scholar, Ralph Walker, together with his distinguished colleague Stephen F. Vorhees, represent the strength, the integrity and the citizenship that the architectural profession has and continues to contribute to the vitality of our nation."

Carl S. Ell, XI, is now chancellor and president emeritus of Northeastern University. Carl retired from the presidency on June 30 after nearly 50 years of service at the university and assumed his new title on July first.

We have a communication from the chairman of the Orville B. Denison Memorial Fund Committee: "Dear Classmates: I deeply appreciate the many notes accompanying your contributions to the O.B.D. Memorial Fund. Not having Dennie's faculty for note writing, I am unable to carry out my desire to answer each one personally. Please accept this thank you as your own.

"I wish to report that on August 24 the contributions from 74 classmates totaled $1292. Due to summer vacations of the Rector and Building Committee, I have been unable as yet to get any definite estimates of the actual cost of our project but my opinion is that we still need more funds to accomplish the memorial in a manner fitting our deep regard for Dennie. I do want to emphasize again that it is, in my opinion, much more important that we *all* join in no matter how small the amount we feel able to give. Dennie was personally interested in every one of us. Now let's every one of us be interested in honoring his memory." Signed Roy G. MacPherson.

The following address changes have been received: Joseph A. Aaron, VI, 9 Summit Avenue, Suite 4A, Brookline Mass.; Harold E. Babbitt, XI, Iowa State University Department of Civil Engineering, Ames, Iowa; Wesley T. Jones, II, 3514 Park Avenue, Apt. 5, Richmond 21, Va.; General George C. Kenny, I, 18 East 68th Street, New York 21, N.Y.; Franklin Osborn 2nd, III, Walnut Road, East of Main, Mounted Route 13, Vineland, N.J.; Colonel Laurence Watts, I, 319 Pine Hill Road N.W., Orangeburg, S.C.; Maurice J. Lowenberg, VI, 115 Freeman Street, Brookline 46, Mass. — JOHN A. HERLIHY, *Acting Secretary,* 588 Riverside Avenue, Medford 55, Mass.

'12

At the Alumni banquet on June 15, the Class of 1912 was well represented by John L. Barry, Albion R. Davis, Jerry and Mrs. Hunsaker, Eric and Mrs. Kebbon, Harold and Mrs. Manning, Hamilton Merrill, John and Mrs. Noyes, Fritz and Mrs. Shepard, Louis and Mrs. Walsh, and Bob Wiseman. In addition to the above at lunch were Fred Busby, Erwin and Mrs. Schell, and Cy and Mrs. Springall. John Noyes' youngest son, Theodore, who is doing graduate work at M.I.T., and John's youngest daughter, Priscilla, both sat with 1912 at the banquet.

Word has been received of the death of Arthur S. Huddell who spent most of his life in Chelsea, Mass., as a civil engineer. He served on the Mexican border with the first Massachusetts cavalry, and in World War I with the 102nd machine gun battalion, and was rated as first lieutenant. He was past commander of the American Legion Post at Delray, Fla., and also past commander of the Curtis Guild Post of Chelsea. During World War II, Arthur was senior inspector in charge of Army construction work in the many forts at Boston Harbor. He was senior partner of Edmund I. Leeds Associates, who specialize in school construction and architecture. Arthur's wife died in 1951 and he made his home with his son, Arthur S. Huddell, Jr. -

A note from Robert H. Woods, Jr., tells of his long service, since 1915, with the Duke Power Company in Charlotte, N.C., with the exception of two years abroad in World War I. He acted as power sales engineer, assistant to the president and vice-president and is now handling administrative duties in the Distribution Engineering Department. He was married in 1917 and has two married daughters and seven grandchildren. He expects to retire in the "Low Country" of the South Carolina coast.

Johnny Noyes has consented to serve as assistant secretary. Won't you either write Johnny or drop me a line as to your recent news? — FREDERICK J. SHEPARD, JR., *Secretary,* 31 Chestnut Street, Boston 8, Mass.; JOHN NOYES, *Assistant Secretary,* 3326 Shore Crest Drive, Dallas, 35, Texas.

'13

Well here starts another year of the publication of The Technology Review. We hope you are as healthy as we are in our family. As you know I retired about four years ago, so after trying several endeavors, I became affiliated with Town and Country Homes in the real estate business. This has been a very interesting experience; for nearly five months I have labored from dawn to dusk seven days a week. My efforts have been fairly fruitful, but have curtailed all other activities.

The third Alumni Officers' Conference at the Institute (even though our old combination of Thompson, Mattson, and Capen appears to be out of gear) was a great success. The professionals were there in full force and details will be reported in the main body of this issue. It was a great pleasure to share the responsibility for 1913 with Gene MacDonald and Professor Allison Butts.

" 'We've Moved This-a-Way' to 210 Massachusetts Avenue, St. Cloud, Fla.," the Rand family, Esther and Harold announced, on the completion of their home. Congratulations to you both! We are looking forward to our next visit with you in your new home.

"Walter E. Merrill, 70, of 61 Madison Street, Medford, retiring engineer (sanitary) of the State Public Health Department of Massachusetts, will be tendered a testimonial banquet Tuesday, March 31, 1959 at 1200 Beacon Street Hotel, Brookline. Merrill, who retires that day, has been in state service since 1913. He was graduated from Harvard in 1911 and took his bachelor of science degree in sanitary engineering at M.I.T. in 1913. He went to work for the Metropolitan District Commission that summer and was transferred to the Public Health Department in 1918." *(Boston Herald.)* We are glad to welcome you, Walter, to the group of unemployed(?)

From a clipping of the *Patriot-Ledger,* Quincy, Mass., we learned that ground was broken April 2 for a new First Presbyterian Church on Penn's Hill, Franklin Street. The architect is none other than our classmate, Edward M. Bridge. He has had an extensive career as an architect since graduating from M.I.T. His work includes design of churches, college buildings, libraries, and large homes from Maine to

Georgia. From 1935 to 1940 he was a consultant for campus development at the American University in Washington, D.C. Ed is a member of all the outstanding architectural societies of America. We are proud of you, Ed.

Our little heart was gladdened to receive such a fine letter from George Clark and to admire the old fighting spirit. We quote: "I was just about ready to blast off about The Review. Most of the articles for some time have been so far over my head that I could not read them with any real degree of intelligence. I was hungry for news about undergraduate activities. The last issue cut the ground from under me. Based on my continued interest in engineering education, I wonder if the B.S. graduates feel slightly frustrated by the emphasis on the graduate school. It's conceivable that they feel that they have had only half an education. Anyhow, 1913 had no such feeling. . . . It seems to be indoor sport for people to blast our educational system. In the first place 95 percent of them, I believe, are unqualified — period — and so am I. I believe that any young man can get the basic education he needs to become an engineer or a scientist if he wants to in almost any high school in the U.S.A. It is the desire that counts. You can't make all brilliant students into engineers and scientists. The basic desire must be there. In my book a young man who really wants to be a scientist or an engineer will become one, hell or high water. I am a little disgusted by all the talk about the top 10 percent or even the top third. Look over the 1913 group: Many of the best men were not top students, but somehow I think what they did learn sunk deeper and that they had real desire and guts." Guess George ran out of gas at this point. Do some of you deep thinkers want to debate the question with George?

The inauguration of Julius Adams Stratton as the 11th President of the Massachusetts Institute of Technology was something that all of us who participated in this history-making will long remember. The Alumni Day with the inspiring program (in spite of the inclement weather), together with the fun and frolic, made us feel that M.I.T. cannot be surpassed by any other institution in the whole world. 1913 was well represented by Frank Achard, the Brewsters, the Burts, Ed Cameron, the Capens, Burt Cushing, the Eichorns, the Eynons, the Flanders, the Gliddens, the Gustins, the Haynes, the Muthers, Charlotte Sage, the Thompsons, Andy Vogel, Austin Wardwell, the Weeks, and Joe MacKinnon. We wish many more of you and your wives or sweethearts could have shared the festivities with us. In the 1957 November issue of The Review, we related the honors of our very loyal classmate and close friend, Arthur Lawrence Townsend. With a very heavy heart, it is our duty to inform you that Al passed away after a short illness August 17, 1959. As most of our classmates know, Arthur Townsend was an outstanding educator from the time he graduated in 1913 until his death. Although he was blessed with all the perquisites of a builder of young, he never married but was a constant helper and ever ready companion to his dear mother throughout her life. We shall miss Al, and mere words cannot express the grief and sadness that surrounds your Scribe, not only as a friend. Through the years he supplied more news of the Institute and our classmates than any other. May the Maker realize that our great loss will be an example for other young men who travel this or his way in the future. 'Til we meet again. 'Til next month. — GEORGE PHILIP CAPEN, *Secretary and Treasurer,* 60 Everett Street, Canton, Mass.

'14

Skip Dawson's suggestion of the Publick House at Sturbridge for our 45th reunion proved a very happy one. Your officers had found it very difficult to find a convenient location where our small group could have its private sections exclusively. They were familiar with the house's fine eating qualities, but were quite unacquainted with the associated Treadway House. That weekend was a rainy one in Cambridge, but except for a shower on Saturday morning the weather at Sturbridge was perfect. The Saturday noon cocktail party and lunch at the nearby Cohasse Country Club proved to be a happy interlude.

Like all who make a good suggestion, Skip was at once made house master for the reunion and took care of the housing facilities. Many thanks, Skip, for a job well done!

The attendance was 43, which, considering the number who have retired to distant places, such as Florida and California, and the fact that our Class was the smallest of those of our time, was a good turnout. The most distant travelers were Rucker Bristow from Dunedin, Fla., and Alden Waitt from San Antonio, Tex. A salute also should be given to several attending who made a great effort to attend in spite of recent illnesses. Affel, Fales, and Fiske also are entitled to a prize since they all have retired to Maine and all attended, thus representing 100 percent of those residing in that state. Since both Bristow and Waitt flew up, Rucker can be excused from not bringing oranges from his own estate, and Alden from not bring some of his paintings, which in addition to winning prizes have been responsible for his being elected chairman of the executive board of the San Antonio Art Institute.

Those attending the reunion were Affel, Ahern, Barratt, Blakeley, Borden, Bristow, Burdick, Calver, Chatfield, Crocker, C. P. Davis, Dawson, Derry, Dinsmore, Duff, Eberhard, Fales, Faunce, Fiske, Gazarian, Gould, Hadley, L. S. Hall, Karns, MacCart, MacLeod, Moorehouse, Mayo, Mudge, Ober, Owen, Parsell, Peaslee, Perley, Perry, Richmond, Somerby, Trufant, Wagner, Waitt, Whitwell, Wylde, and Zecha.

Following our reunion on Monday came Alumni Day highlighted by the inauguration of the new president of the Institute. Due to the rain there was a change in programs and it was not possible to obtain a complete list of Fourteeners attending the various meetings. Our class president, Charlie Fiske, was in the inaugural procession, but was not able to stay for the Alumni banquet in the evening, the only event that your secretary has a list of Fourteeners attending. There must have been many others attending the day events. Those at the dinner were Blakeley and wife, Bristow, Crocker and wife, Derry, DesGranges, L. S. Hall and wife, Hamilton and wife, Karns and wife, Mayo, Peaslee, Richmond, Sherman, H. S. Wilkins, and Zecha.

Were it not for the limitation on space placed by the editors, your secretary would like to quote from everyone who wrote the reason he could not attend the reunion. Just a couple are chanced: O. C. Hall has always been with us. His first miss was caused by his daughter, Gabrielle, graduating from high school. We believe that this is his youngest of five children. O. C. lives at Charlottesville, Va., and is with an independent telephone manufacturing company there.

Joe Beaudette, formerly of Watertown, Mass., has retired to DeLand, Fla., and just felt he could not make the trip up for the reunion. He was formerly in the electrical business now operated by his eldest son. His other son is an M.I.T. graduate and is president of a technical instrument manufacturing company in Newton, Mass.

Roy Brett, whose home is in Riverton, N.J., was confined in a hospital with a serious operation and could not be released in time to attend the reunion. Best of health to you with full recovery.

Ed Wente was right in the middle of receiving honors which prevented his coming to the reunion. He has received many other distinguished awards such as the gold plaque of the Academy of Motion Pictures, the John Price Wetherill Award of the Franklin Institute and numerous others. His present award was the gold medal of the Acoustical Society of America and the award was made at a meeting in Ottawa, Canada. Dr. Wente writes, however, that he cannot make any claims to the grandchildren race as he only has two sons and neither is married.

Ray Dinsmore has been frequently in the public press. First he received the American Institute of Chemists gold medal for his achievements in chemistry. Next comes announcement of his appointment to the board of trustees of Kent State University by Governor DiSalle of Ohio. Kent is about the same size as M.I.T. This note came from the courtesy of Bob Moorehouse; I would like to thank those many Fourteeners who supply your secretary these type clippings.

Ernest L. Osborne has been awarded the certificate of outstanding service to the military comptrollership. Osborne served for many years as a colonel and now is in private business at Washington, D. C. His company specializes as an advisor on management of scientific and engineering research and development organizations.

In the short summer just passed has come word of the recent death of four classmates. The first was that of Oliver E. Conklin on June 16, who had spent nearly all of his graduate life with the Du Pont Company, as a physicist on photographic work. Conklin was credited with a setting used in measuring the sensitivity of photographic film. He also made many contributions to precise control in the manufacture of film, and took an active part in the technical societies of his field. During World War I he was with the Bausch and Lomb Optical Company, working on military optical systems. He prepared for the Institute at the Stivers High School at Dayton. Conklin lived at Parlin, N.J., for more than 30 years. He is survived only by his wife, the former Mildred Allen.

Our associate Dr. Wilford Winninghoff died on July 8. Although taking his doctorate degree in 1914, Winninghoff took a keen interest in our undergraduate affairs. He came to the Institute after graduating from the University of Montana. In World War I he first served as a chemist at the American University Experiment Station at Washington, D.C., then as a captain in the Chemical Warfare Service. He served for 30 years at the lamp division of the General Electric Company, at Cleveland. After his retirement he became a research engineer for the Boeing Company, at Bellevue, Wash., and later a consulting engineer for that company. Dr. Winninghoff is survived by his wife, the former Mary Dawson, and a son.

Another of our classmates to die in July was Walter Joseph Hauser on the 13th, of a cerebral hemorrhage. Walter prepared for the Institute at the Mechanics Arts High School of Boston. He was one of the few in our Class who took part in the Tech Show all four years. Walter graduated in architecture and during World War I was a topographical mapper, Aviation De-

tachment, M.I.T., and School of Military Aeronautics, making large-scale maps of battle-front areas and the coast line. For many years he had been a research curator of Near Eastern archaeology of the Metropolitan Museum of Art in New York City. He did work for this museum in Iran at the sites of ancient Ctesiphon and Nishapur. There is no information as to his surviving family.

Without date or other data, word has been received of the death of Howard C. Sampson. Howard prepared for the Institute at Whitman, Mass., high school. While at the Institute he was on the tug-of-war team during his freshman and sophomore years. During World War I he was a second lieutenant of field artillery. After leaving the Institute he was engaged almost entirely in construction work. Unfortunately, we have no information regarding his family. — C. P. FISKE, *President,* Cold Spring Farm, Bath, Me.; H. B. RICHMOND, *Secretary,* 100 Memorial Drive, Cambridge 42, Mass.; H. A. AFFEL, *Assistant Secretary,* R.F.D. 2, Oakland, Me.

'15

Hello everybody and a welcome to our 1915 column for this season. The big news is our 45th reunion in June 1960, somewhere on Cape Cod. Max and Weare are setting up the plans for June 10-13, returning to Boston for Alumni Day at M.I.T. on Monday, June 13, and our big annual class cocktail party on Monday afternoon before the Alumni dinner. Plan to be there — save those dates — detailed notices later. At the Alumni Officers' Meeting in Cambridge on September 11 and 12, Ralph Curtis, Springfield, Mass., Gardner Wilson, Mountville, Pa., Max, and I represented our Class. It was an enjoyable and inspiring meeting, leaving us all with a great sense of pride in being a small part of this splendid group of Alumni.

Ben Neal continues his fine work on our 50th fund and wrote last spring: "Home safe and sound from the fishing trip! Messed up the back end of the car on a stump, got stuck in the mud where the frost wasn't out of the ground, and was low man on fish, although I had a wonderful time! Last year I was the high man, but this year only caught four, so I guess it evens up. The group as a whole, however, caught quite a bit more this year than they did last, and they certainly were beautiful trout. One of the boys got a 16-pounder.

"Outside of congratulating you, I didn't make any comment on the wonderful job you did on class dues, but it's a very interesting thing; you have 128 contributions, and while I haven't checked recently, I think I have about 45, possibly 50, for the fund. Naturally, I don't exactly know the answer, as you would think that the fellow who would respond to you on the class dues would come in for at least something for the fund. I was mighty tickled to get this M.I.T. club meeting here off my hands. I managed to pick up a hundred people, including the wives, to attend the meeting at the Country Club of Buffalo. It goes without saying that everybody seemed to have a good time. I thought Dr. Sizer was especially interesting. Anyway it's over, and I am glad that chore is off the books, coupled with going out of office. It's just too much for an old guy." Ben deserves everyone's help and contribution, so if you have not yet sent him anything for the 50th fund, now is your time! Our class spirit and camaraderie are famous; everyone always ready and willing to help someone else.

I wrote to Hen Berg for a little favor in San Francisco and he came through nobly — a great guy. He wrote that he and his charming Avis will be at our 1960 reunion. After years of silence, it's good to hear from Ray Delano, Duxbury, Mass.: "For the class notes, I have a wife and two married sons, one of whom is a doctor and the other an engineer, also five grandchildren. I have been in the construction business for the past 40 years, and for the last 15 have been a superintendent of construction for the Morton C. Tuttle Company of Boston. With kindest regards to you and my former classmates." Here's a delightful letter from Loring Hall, giving his views and observations from his world cruise: "Your gentle 'touch' of February 14 was included in a mountainous pile of mail that was awaiting me when I came home a few days ago. Ruth and I sailed January 30 on the *Coronia* for a trip that I had been dreaming about since I was in grammar school — a voyage around the world.

"It came up fully to my expectations, although I did get a bit impatient to get home toward the end. Four months is a long time to be away. I won't list all the ports, but just hit the high spots, which were Rio, Capetown, Bombay, Singapore, Bangkok, Hong Kong and Yokohama. We repeated April 16 as we crossed the date line and continued east until we reached our own far west. The last leg took us to Mexico and through the canal to New York.

"As we smoothly passed through the Panama Canal, I was reminded of my early ambition to have a part in such huge engineering projects. I could visualize the problems that had to be solved in order to make the canal a success and was proud that it was American enterprise and persistence that finished the job. After seeing so much of the tropical belt it is good to get back to Michigan, where the four seasons make life interesting. I have no desire to settle down in any of the places where it is perpetually summer. Remember me to all the boys when you see them. We are short of 1915 men in Detroit."

Jim Tobey has been lecturing to graduate students in the department of health at the Yale School of Medicine for the past four years. Doug McMurtrie shows his great loyalty in taking time just before the excitement of sailing to send class dues and this letter: "I retired from Brown Company on April 30 after 44 years in the woods — with a couple years out in World War I — and am off to Paris with Madeleine to celebrate our 40th wedding anniversary. Sailing on the *S.S. Saxonia* from Montreal to Havre tomorrow morning, and from Havre around the country by one of those underslung Citroens with air suspension. Maybe three or four months."

In addition to his generous gift to Ben Neal's fund, Herman Morse in Akron shows his additional M.I.T. interest: "I have spent some time in M.I.T.'s interest the last few months as I served as chairman for the Akron district in the annual M.I.T. Alumni Fund campaign. This is the third year we have had an organized drive and the results are evident as last year bettered the first year and this year we are now sure of a new high aiming for 75 percent to 80 percent participation. I am still working and next month should reach my 44th year with Goodyear. Obviously, it won't be too long before retirement but with 2 grandchildren in Akron and 2 in Toledo this will continue to be our home with perhaps longer periods in Florida during the bad weather. I have been in touch with Ben Neal and made my contribution toward the 50th fund. I see Parry Keller now and then, as he still makes his home in Akron. Our classmate Norris Kimball passed away after a long illness around Christmas, 1958. I hope Mrs. Morse and I can get to Boston for our 45th in 1960."

Funnyman Bur Swain, gives a little advice on retirement: "Do not retire. With a job your time is planned. Retired, your time quickly becomes not your own. Here the grass grows too darn fast, the little flower garden is only half planted and the car runs hot. I wish I were working (sometimes). Sorry I can't make Alumni Day this year but I'll be there on the 45th. I do hope Fran and you are enjoying the best of health and happiness." Evers Burtner shows his continued loyalty to the Department of Naval Architecture, where he has been a professor for many years: "For the past six or seven years, my chief outside interest has been in the nautical museum at Tech and I have spent considerable non-scheduled time and effort in trying to improve it."

After years of silence, Bill Tallman, IV, gets away from pressure to say: "Nothing much new except a fifth grandchild born in Atlanta last September — George P. Griffith, 3rd. I still have a flat nose from the architectural grindstone of the New Bedford area though I'm tapering off with a month in Florida in the spring and a few weeks in the fall — plus some long weekends in between." A big black headline in *The Wall Street Journal* leads the story, "The Morning Ritual: Razor Makers Boost Research to Stimulate Sales," and says: "White-haired Eldridge Casselman, Director of Research at the Staunton, Va., plant of American Safety Razor Company, says: 'Incompletely softened hair, dull blades, and improper shaving angles are the chief causes of an unsatisfactory wet shave.' Mr. Casselman, incidentally, has invented a device he calls a sharpometer, which checks the sharpness of new blades by the use of light beams." That's our own Course X boy!

From 101 Laurie Drive, Ormond Beach, Fla., Fred Stetson wrote Ben Neal: "Under my company's retirement plan, I was forced to retire at 65 last July. Since then I have worked in a consulting capacity on three jobs — two on foreign projects that may amount to something in the future. These jobs were interesting but not too lucrative. My wife and I decided last fall that if we had to be retired we might at least live in a location that we liked. So we bought a house here in Ormond Beach near Daytona Beach, Fla., near the ocean. To our minds, it is much pleasanter than living in the cold north. If you come down sometime in the future be sure to look us up. We would enjoy having you and your wife stay with us. Outside of the annual New York dinners, I haven't seen any M.I.T. men for some time. And it doesn't look as if I can make any more of those dinners. My son-in-law, Duane Uhri, is still going to M.I.T. where he is doing graduate work toward a Ph.D. in geophysics."

Of course, I see our Boston crowd regularly including many pleasant social family visits together. Added to that, this summer Fran and I visited Boots and Helen Malone on their attractive farm in Chester, Vt., and then went on up to see Doug and Elizabeth Baker at their farm in East Middlebury, Vt. Neither is making a business of farming, but both with their charming families are thoroughly enjoying retirement in the country. Ted Brown who lives nearby had been in to see Doug. In New Haven we spent a delightful evening with Vince and Marion Maconi, grand-parents several times over but still gay and both good golfers. Sol Schneider

from Philadelphia was in Boston with his family and had lunch with Jac Sindler and me. These are all pleasant and nostalgic contacts, ever serving as reminders of our fine old friendships. Long may they wave!

Loring Hayward's odd and serious accident shows what can happen so unexpectedly. I've just stopped to phone him and we're all glad to know he has recovered sufficiently (although not completely) to return to his civil engineering practice, most of which is outside field work. All our best to Loring for a complete recovery soon. His wife, Ruth, wrote: "I enjoyed your letter as I read it to Loring. I am sorry to say that a jinx is still following him. On May 7, he had a freak accident. He was crushed by the door of his car and it caused a bruised breastbone, a torn liver, a very badly bruised left shoulder, right leg, and back. Guess he had everything except broken bones and we are thankful for that. He was in the hospital for two weeks, is at home now, but he isn't gaining very fast. He is very depressed, as is expected, because it just knocks his business for a loop. I am hoping that as he gains strength he will be able to come to some decision about the future. Right now it is forced retirement and he isn't the type to accept it willingly. I hope that soon I can give a more cheerful report."

When Stan Osborn retired in May as state health commissioner for Connecticut, he had the record for the longest service as a commissioner in the state and the longest service record as a state health commissioner in the country. From the many glowing tributes in Connecticut newspapers and professional journals we quote: "When Dr. Stanley H. Osborn steps aside as Connecticut's state health commissioner, he will leave behind an enviable record of accomplishment. In his nearly 40 years of service, Dr. Osborn has instituted numerous programs to safeguard the health of the people of this state. Two years ago he was paid the highest tribute that can be given to a public health officer in New England. He was awarded the Lemuel Shattuck medal by the Massachusetts Public Health Association. Throughout his long service Dr. Osborn has been zealous in weeding out questionable practitioners as well as moving quickly to check, as effectively as possible, the spread of any disease that threatened to assume epidemic proportions. He staffed his department with able specialists and experts in many fields of public health. Dr. Osborn long has been held in highest regard by the members of his own profession, his associates in the state service, and all citizens who have had occasion, through the years, to call upon him for assistance. Everyone will wish him well in retirement. Recognition of Dr. Osborn's talents goes back a long way. For his work in Siberia and Bulgaria in World War I he received medals from both countries, to become one among the few to be honored by both sides in that conflict. Indeed, as with anyone who has a long and distinguished career, Dr. Osborn has accumulated a wide range of medals, honorary degrees, and high offices in national organizations. But no ceremonial honor can excel the gratitude of Connecticut citizens for a long and devoted career to better their health. Our thanks, Commissioner."

Details of the enjoyable and pleasant class cocktail party, which Al Sampson and Barbara Thomas so ably and successfully put on for us on Alumni Day, will purposely be deferred until next month's column. It is sad to record the loss of these classmates: William M. Carr, Billerica, Mass., December 1957; Francis E. Buckley, Brookline, Mass., June 3, 1959; Robert R. Harper, Dallas, Texas, August 24, 1958; Frank Leslie, Jersey City, N. J., May 20, 1959. The sympathy of our Class goes out to the families of these men. — AZEL W. MACK, *Secretary*, 100 Memorial Drive, Cambridge, Mass.

'16

The 43rd reunion was held at Chatham Bars Inn in Chatham, Cape Cod, on June 12, 13, 14, a period not undrenched with rain, excluding Saturday morning. With a total attendance of 36, none could escape noticing the rising trend in numbers and wondering what the count might have been had the elements not favored us with the rain that the Cape Codders say they really needed. Somehow a clam-bake indoors, while excellent, just isn't the same as a clam-bake outdoors. The roster included: Mr. and Mrs. Joe Barker, Mr. and Mrs. Bill Barrett, Steve Berke, Jack Burbank, Mr. and Mrs. Howard Claussen and son Fred, Mr. and Mrs. Dan Comiskey, Harold Dodge, Jim Evans, Mr. and Mrs. Ralph Fletcher, Freeman Hatch, Mr. and Mrs. Emory Kemp and Mrs. Kemp's sister (Dorothea Smith), Bob O'Brien (our hard working honorary member), Dave Patten, Mr. and Mrs. Lew Pratt, Izzy Richmond, Mr. and Mrs. Hy Ullian, Mr. and Mrs. Nat Warshaw, Mr. and Mrs. Don Webster, Steve Whitney, Bob Wilson, and Jack Woods. Although the 43rd is now history, many will remember it for such things as:

Steve Whitney on the dance floor just like old times . . . our newest bride Margaret Barrett who had a taste of 1916 reunions and promises to come back . . . scooting from cottages to the main hotel in the downpour on Sunday . . . the absence of firecrackers and what could Ralph have done with them anyway except when the photographer was taking the class picture? . . . word from those who had been under the weather since last year's reunion (Emory Kemp and Bridgie Webber) that the flow of letters to the hospital bedsides were of high potency in inducing recoveries . . . the round of golf with Messrs. Barker, Fletcher, Wilson, and Dodge in which every hole but one was even for Joe and Bob . . . the official 1916 gathering place around the fireplace in the cottage across the road . . . the year's collection of news clippings and bulletins of famous doings mounted for all to see near the fireplace . . . Jim Evan's stop at Oyster Harbors Club on the way to Chatham to visit with Hovey Freeman . . . the joint contribution of Hovey and those at the reunion to replenish the class treasury . . . the pleasure of having two sons of grads (1) of Howard Claussen, Harvard '59, and (2) of Nat Warshaw, M.I.T. '44 (also having his reunion at Chatham Bars Inn) with us . . . the old-fashioned night shirt worn by you-know-who . . . the trip by the Barkers and the Brophys with Steve Berke to carry the greetings of the Class to Louise Berke in West Harwich . . . the convenience of the reunion to Hy and Mrs. Ullian, who now have a place in Chatham . . . the information that Howard Claussen has had a license to operate boats since way back in his teens — the youngest in the East at that time . . . the auto trips around the Cape including the one to the tip of Provincetown by Messrs. Whitney, Warshaw, O'Brien, and Dodge . . . the eye-dazzling tip-to-toe red outfit of one Joe Barker . . . the prime example (Izzy Richmond) of how systematic regular exercise keeps oldsters in trim and fine fettle . . . plus the latest example of slimming down (Nat Warshaw) who has been a regular attendant at a health center and gym in Jenkintown during the past winter and spring (Nat retired this summer and now lives in Hull, Mass.) . . . talk about Mary Barker's assist to Governor Rockefeller and wonderings about possibilities of political futures . . . and echoes of appreciation and praise for all that Ralph Fletcher and Bob O'Brien had done in planning and making arrangements for the reunion.

There were a number of "will-be-far-away" regret cards and letters: Willard Brown in Brussels; Art Shuey in Spain; Charlie McCarthy in England; Vert Young on a safari in Africa; and Paul Austin in Bangkok. Len Stone was grounded by fog in New York — we missed his challenging putts.

The main event was the Saturday banquet. Thirty-two were seated around a long table, a happy group, slightly mellowed by the excellent wine served with the dinner and urged on by their fine toastmaster and taskmaster, Steve Brophy, who called on most of those present to say a few words about their present activities. We had fine reports by Bill Barrett and Joe Barker on the progress of the Alumni Fund both for the current year and for the 50-year class gift . . . the latest goings-on in the dairy business by Dan Comiskey . . . the initial reactions to retirement on the Cape by Don Webster . . . an invitation to good furniture by Lew Pratt who is in the business on the Cape . . . hints on how to keep young and busy by Izzy Richmond . . . the art of commuting from Hull at the seashore to Philadelphia by Nat Warshaw and also a happy introduction to his son (on his 15th reunion at the Inn) . . . how to retire gradually by reducing the work-week to two days and spending the balance on the Cape by Hy Ullian . . . the fast-approaching push into retirement for both Howard Claussen and Jack Woods, neither of whom are anxious for it . . . the latest on the Mayflower from Dave Patten . . . the nice feeling of being present with such a wonderful group by Freeman Hatch . . . an invitation to enjoy the refreshing natural beauty of New Hampshire, in Intervale, by Steve Whitney . . . Joe Barker's substantial effort on the local school board in New Rochelle . . . Dave Patten's interest in the exchange arrangement whereby youngsters from foreign countries come to the U.S. for the summer and boys and girls from this country go abroad in a program sponsored by the Boys Clubs of America . . . Steve Brophy's keen interest in promoting a clinic and program for the facially disfigured . . . the pleasure of having 11 lovely ladies in the group . . . and the pep talk to close out the evening by Ralph Fletcher, calling attention again to the fine Alumni Fund record, the excellent class notes column appearing eight months of the year, the fine attendance at the New York dinner, the Boston dinner, and the monthly luncheons — "all illustrative of the great spirit of the Class of 1916." With the banquet at an end, we traipsed into the crowded main dining room and stopped — a quick huddle, a hurried check of signals, and then a well-organized noisy M.I.T. cheer for '16 — '16 — '16 followed by a louder '44 — '44 — '44. 'Twas well received and later we had an official message of appreciation from Paul Heilman, secretary of '44.

Attendance at the class cocktail party on Alumni Day included: Mr. and Mrs. Joe Barker and the following guests: Mr. and Mrs. Sidney Hall (M.I.T. '43) and their son, Leigh, Mr. and Mrs. Leigh Hall (M.I.T. '14) and Mrs. Eustis; Mr. and Mrs. Percival Gooding; Mr. and Mrs. Ralph Fletcher; Mr. and Mrs. Emory Kemp; Mr. and Mrs. Hy Ullian; Bob Wilson; Dick Hunneman; Al Lovenberg; Shatswell Ober; Steve Whitney. A good time was had by all.

Two more retirements are recorded for July 1 — Earl Mellen and Jack Burbank. Earl, who until the last minute had planned to attend the reunion, writes: "So you see, this would have been a most opportune time for me to have attended the reunion to find out from others who have had this experience how it works and whether they are enjoying the liberties and freedom or would prefer to be confined to the problems of day-to-day operations in business or other activities." Jack wrote in June: "My plans are to retire completely to my Marstons Mills, Cape Cod home so moving all of my furnishings from my Hartford house to Cape Cod, after the Hartford house is sold, will be necessary. Mrs. Burbank and I extend an invitation to classmates and wives to stop by at our home for a visit when and if they are driving around the Cape and find themselves on Route 149.. We are one mile north of the village of Marstons Mills and three miles south of the Mid-Cape Highway. My name is on a sign hanging on a large oak tree alongside of the road."

Arvin Page has sent a very complete coverage of his cross-country automobile trip and deserves just about what he asks for — "20 years cridit" for column material. In the July issue we gave an account of his visit with Jimmy Murdough, who is head of civil engineering at Texas Tech. Arvin's comments on the approaches through Texas to Jimmy's, and on the quality of air-conditioning systems (his life work) are on the interesting side. He says: "Crossed the Mississippi . . . Stopped at one filling station and was given the third degree by a loiterer there, who was very proud of having at one time traveled 500 miles into Texas. He asked me if I was a preacher — said I looked like one! Night at Longview, Texas. April 9 — Hit the Texas desert — very uninteresting — they don't call it a desert but that's the way it looked to me. Stopped in Wichita Falls at a new Holiday Inn, so new only half the rooms were finished. The front wall of the room was one large plate glass window, with no outside opening other than the door. The air-conditioning system apparently supplied no fresh air as the room surely was not all it should have been in the morning. Possibly the system was incomplete, if not, someone sure pulled a boner. April 10 — Through more sorry-looking fields. Looks as though it would take about 100 acres to feed one cow. Then up about 2000 feet to the plateau where we ran into the first extensive farm irrigation. Prosperous looking farms. Another new Holiday Inn with windows that opened." More of Arvin's observations and adventures on the West Coast and his visits with Lev Lawrason and John Ingle in a later issue.

Bob Wilson continues as a member of the General Advisory Committee of the Atomic Energy Commission, and was mentioned in the May 22 issue of *Science* in connection with a report published by the Committee reviewing the dangers of radioactive fall-out from nuclear test explosions. Also in May, Bob gave one of the 12 basic papers at a symposium on basic research at the Rockefeller Institute in New York. His paper was on "Support of Basic Research by Industry." Although Bob is retired, he also presented a paper on June 1, on the subject of "The Probable Impact of Atomic Energy on the World Petroleum Industry," at the Fifth World Petroleum Congress. This is most interesting reading — write to Bob (135 South La Salle Street, Chicago 3), he may have some more reprint copies. He and Mrs. Wilson sailed on August 14 for two months in Europe. They will visit most of the countries on the continent and attend the International Union of Pure and Applied Chemistry at Munich and the Annual Assembly of the International Atomic Energy Agency in Vienna. Bob's assignment: an official U. S. delegate to the I.A.E.A.

Don Webster, now a Cape Codder located in Davisville, Falmouth, Mass., reports that he and Mrs. Webster are living simply and taking it easy. They have some classmates among their near neighbors. "Jack Burbank, in his new home in Marstons Mills, is a few miles away. Warren Tapley who started with us, I believe, but went to Dartmouth and came back and finished with 1917, lives in West Falmouth. 'Santa' Claussen is in Cotuit, not yet retired." For these, says Don, attendance at nearby reunions should be duck soup.

A July 30 issue of *The Buffalo Evening News* shows a picture of — you've guessed it — Ted Jewett! His picture carries the sub-title "Heads New Department," and comes with a three-column spread title, "Buffalo Bolt Site Purchased for Modern Industrial Park." Here's what the paper says in brief: "Plans for a multi-million-dollar, 30-acre industrial park on the site of the closed-down Buffalo Bolt plant in North Tonawanda were formally announced today by a group of prominent Buffalo businessmen. The industrial development will be known as Niagara Industrial Park, Inc. The president of the new development is Theodore C. Jewett, retired Vice-president of Spencer Kellogg and Sons, Inc., and now Vice-president of Morrison Plan, Inc., an affiliate of the Morrison Railway Supply Corporation of Buffalo."

Some time back, Ralph Fletcher reported a postcard from Oslo from Irv McDaniel bearing the message: "As the ski-jumping championships are held here, you probably know this place very well. Up here until we can get our Mercedes, then probably two years vagabonding around Europe. First time we have ever been over. Expect to spend first winter in Torremolinos, Spain. Will write when we get a schedule."

In June, Steve Brophy had a double-barreled honor: (1) he was one of the two recipients of the first annual Advertising Federation of America Awards for Distinguished Service, and, note this, (2) he received President Eisenhower's wired congratulations. Steve received an attractive bronze plaque bearing the Advertising Federation of America insignia and the A.F.A. "Truth in Advertising" symbol. The inscription on the plaque includes ". . . Thomas D'Arcy Brophy, whose professional achievements and dedicated leadership in public service have added greatly to the stature, acceptance, and effectiveness of advertising." Congratulations again, Steve!

Nat Warshaw reported in August that he was back in Hull for good. Couldn't take the commuting back and forth to Philadelphia, each weekend, from May to October and it was too lonesome to stay down there alone. He says: "Have already had nice visits with Johnny Woods, Harold Russell, and Tom McSweeney. They all seem well. Tom, I found, lives not far from me in Hingham and I pass his office every time I go in town (Boston). He has a unique set-up with his wife and son with him. It has become almost a habit to stop and chat for a few minutes. Have enjoyed some wonderful weather since returning to Massachusetts and a 'mile a day' swim. We are only 50 yards from a wonderful seven mile beach."

At reunion-time, Willard Brown was in Brussells attending the once-in-four-years meeting of the International Commission on Illumination. He is vice-president of the U.S.A. delegation which, he says: ". . . this time totaled 51 delegates plus an assortment of 35 wives and children. It's a two-week affair with language difficulties, and so on, although the modern simultaneous translation 'a la United Nations' certainly solves most of the problems. Mrs. B and I flew to London on the Pan Am jet, and on it back from Paris, and I certainly recommend it to the brothers. The night flight over (the British still won't let the jets land in the evening so there have been no day flights to London) was not quite as pleasant as the day flight back from Paris. To an old Navy file (I am still a captain on the retired list of the Naval reserve) accustomed to the leisurely pace of ocean travel, this idea of having breakfast in Paris, morning coffee in the Azores, lunch in Boston, and dinner in Cleveland leaves you sort of wide-eyed." We must save the rest of Willard's story for later.

In our little local paper, the *Mountain Lakes News*, we found an article in August in which the first line was "Leonard E. Best." Len, who for many years has been very active in education circles in New Jersey, is chairman of the Citizens Committee for College Opportunities in New Jersey. This is a committee that is actively supporting a $66,000,000 bond issue for public college construction at the November 3 election, and in the article, Len asks for generous support of the state's private colleges and universities as well.

Locke Obers in Boston was the setting of a delightful event in August — the presentation of a captain's chair to Ralph Fletcher from members of the Class. This was initiated during the quiet hours of the reunion but completed and carried through by Jim Evans after the reunion. The original intent was to make the presentation to Ralph in his new home up in Bedford, N.H., but the Boston location was found to have advantages. Sibyl brought Ralph all the way from far down in Maine where they were on vacation, and how well she kept the secret can only be expressed by: "You should have seen Ralph's face." Those present were: Clint Carpenter, Howard Claussen, the Dan Comiskeys, Bob Crosby, the Harold Dodges, the Jim Evanses, the Ralph Fletchers, Emory Kemp, Bob O'Brien (our honorary member who also arranges things), George Petit, the Izzzy Richmonds, the Nat Warshaws, the Bridgie Webbers, Ed Weissbach, Steve Whitney, and Jack Woods. The formal dinner program was opened with a prayer by our own Rev. Ed Weissbach, a rector in the Episcopal Diocese of Camden, N.J. After the first course, the formal presentation of the chair, with its inscribed plate "Ralph A. Fletcher, President, Class of 1916, M.I.T., from his classmates, August 10, 1959," was made by Jim Evans with assists by George Petit, Howard Claussen, and Jack Woods. Jim reported a fantastic response to his letter regarding the chair fund and also presented Ralph with a red leather loose-leaf binder containing all the many letters received together with a four-by-six foot 1916 banner. Ralph's acceptance was most appropriate, with an expression of enthusiasm for things 1916 that would be hard to match.

Your Secretary recently discovered that an engineer colleague at Bell Labs for more than 30 years (now retired) was a close acquaintance of Gene Barney's in their college days at Denison University. Gene writes that he attends M.I.T. meetings in Detroit when he can and: ". . . haven't seen Phil Baker or Cy Guething for a couple of years. I've been retired almost two years from General Motors which was good to me. I'm in excellent health and enjoying life."

Bridgie Webber, who is recovering nicely since he left the hospital in mid-April, wants to express through the column his appreciation of all the cards and letters

received from Sixteeners. He notes: "You never realize how much it means to receive a note of cheer until you are flat on your back."

Late in May in Cleveland we talked on the telephone with Ralph Spengler whom we expect will time a visit to New York with one of the monthly luncheons one of these days. (They are held the Thursday following the first Monday of each month in the M.I.T. Club of New York, Hotel Biltmore.) Telephone contact also brought out that Bert Ellis, though he retired but two months earlier, was very happy — busier than ever, it seems — with some part-time consulting, and straightening things out around the house (we know — probably all that junk he brought home from the office when he retired).

Also last May, Van Bush did an exceptional job on the TV program of "Meet the Press." With respect to the foreign aid program, he is chairman of the Committee to Strengthen the Frontiers of Freedom.

We regret to report the death of Howard Green on July 8. He had a coronary thrombosis in April, 1958, from which he had made a good recovery. But in June when he went for a regular check-up he was found to have a condition that would not yield to medication. Howard was widely known as a population expert, and was variously called "Cleveland's No. 1 statistician," a "population prophet," an "expert in population trends," and a "statistical wizard." A short account of his brilliant work was given in our March 1959 column. He had been secretary and director of statistics of the Cleveland Health Council since 1925, and was known world-over among statisticians for the population-trend techniques he developed as director of Cleveland's Real Property Inventory, a running double-entry ledger of greater Cleveland's physical properties and population. Editorials in the Cleveland newspapers mourned the loss of a "brilliant leader" and said "his brain and imagination gave Cleveland a national identity."

Buck Bucknam reports enjoying retirement since January 1 when he moved to Auburn, Calif. He especially enjoys having no snow or ice to contend with in the winter. He's kept busy as a "carpenter's helper" building a two-car carport and has started on a 21-by-14 foot addition for a den or family room with a fireplace. Says they have a wonderful view of the Sierra foothills, "quite different from the flat Illinois country." While not able to attend this year's reunion, he expects to make the 50th in 1966.

Art Caldwell reports that he, with Herb Mendelson and Stew Rowlett, held the fort at the July luncheon in N.Y.C. Says: "This amused Dix Proctor whose class had a big turnout. As he was leaving he passed by us and could not resist the jibe: 'And is this the Class of 1916?' "

This concludes the column for this month. We have retirement bits on Shatswell Ober, Stephen Simpson, Berthoud Boulton, and Bob Burnap together with interesting stories from Maury Holland in Honolulu and Paul Page Austin in Bangkok which will be given in our next issue. So, to keep the column full and interesting, just write, on the slightest pretext, to — HAROLD F. DODGE, *Secretary*, 96 Briarcliff Road, Mountain Lakes, N.J.

'17

On Saturday preceding the June Alumni Day several "would-be" golfers (except for one Blanchard) met at the Brookline Country Club. The rain stopped as the group approached the first tee and started with a downpour just as everyone finished on the 18th. The golfers were Phil Maher, Ray Maeder, Ray Blanchard, Ray Stevens and your secretary. Al Lunn, who had sprained his wrist, joined the group for dinner. Golf scores remain a secret.

Because of rainy weather, the Alumni Day programs were held inside. In the morning President Stratton was officially installed as President in the Kresge Auditorium. A number of notable college presidents attended and participated in the program. The day wound up with a concert by the Boston Pops Orchestra. The 1917ers present were Carleton C. Adams, E. E. Aldrin, Walter and Mrs. Beadle, Rudolph and Mrs. Beaver, Kenneth and Mrs. Bell, Raymond and Mrs. Blanchard, A. Ray Brooks, Penn and Mrs. Brooks, Irving B. Crosby, William and Mrs. Dennen, Atwood and Mrs. Dunham, Stanley and Mrs. Dunning, Heine Gartner, Clarence Holt, Stanley and Mrs. Lane, Lobby and Mrs. Lobdell, John and Mrs. Lunn, W. I. and Mrs. McNeill, Haig and Mrs. Solakian, Raymond and Mrs. Stevens, A. E. Tuttle, Walter and Mrs. Whitman, Allison and Mrs. Williams. At dinner, the head table was supported by Lobby at one end and Penn Brooks at the other. Sorry more of the Class were unable to enjoy the very pleasant meetings and exhibits.

During the past summer, the efforts of Ray Stevens, Ray Blanchard, and Heine Gartner have been directed toward finding a suitable location for our 45th reunion in June 1962. They have settled on the Snow Inn at Harwichport on Cape Cod. This place offers excellent food, salt-water bathing, and availability of several good golf courses. Make a mental note of the date and plan to be on hand for an outstanding 45th.

By the time this is being read Tubby Strout will likely be back in the Boston area. He anticipates a six months' leave of absence from the California Packing Co., San Francisco, on Sept. 1, to be followed by his retirement on March 1 next year. He plans to live near Boston, the old home town.

Stan Dunning reports that being in the vicinity of Hazardville, Conn., in July, he dropped in, unannounced, on Johnny DeBell. Johnny was in Moscow, USSR, on an extended trip. However, Johnny's son Dick (M.I.T. '48) gave Stan a very interesting tour of the extensive laboratories of DeBell and Richardson, Inc., specialists in research and development of plastics. John's son "F.D." (M.I.T. '44) is also associated with him in the business.

Last year Hank Stagg said that he was not getting ready to retire. Judging from a picture of him as President of the Hawley Hardware Co., Bridgeport, Conn., taken at the opening of its new, enlarged home, he has added to his responsibilities.

G. Radcliffe Stevens looks to be as hale and hearty as ever in a picture of him installing and congratulating his son as President of the Elgin, Ill., Rotary Club. Rad had been president in 1942 and 1943. Rad is President of the Elgin Manufacturing Company, the oldest manufacturer of filling and capping machines for the food and paint industries in the country.

We know that our Treasurer, Loosh Hill, is a man of many parts, but skippering a "whale boat" with a crew composed of his three grandsons appears to be a new activity. Loosh is commodore of the Beverly Yacht Club, Marion, Mass.

Bill Dennen writes, from the Department of Mines and Mineral Industries of the Commonwealth of Pennsylvania, that his contemplated retirement last spring was interrupted when the Susquehanna River broke into the mine workings near Pittston, with the loss of 12 men. He writes: "When I came with the Department three years ago, it was to handle a $17,000,000 Federal-State appropriation for mine-drainage and flood-control work and consisted of the installation of approximately 30 deep well pumps of approximately 5,000 G.P.M. each with heads varying from 350 to 950 feet. In addition to the pumps, considerable work was planned in concrete paving of creek channels, backfilling stripping pits and other work on the surface to prevent seepage into the mines. When I do quit, I plan to spend part of the time on the farm, and the rest of the year, visiting the children and traveling." Bill has contributed two sons to M.I.T.: Bill, Jr.'42, Associate Professor of Geology at M.I.T., in charge of the Cabot Laboratory and Dave'54, who is a first lieutenant in the Chemical Warfare Service. Dick, another son, is a lieutenant colonel in the Air Force, and is Deputy C.O. of the Space Section, USAF Research and Development Headquarters, Inglewood, Calif. Bill brags of six grandchildren; four boys and four girls.

A few vacationists have been heard from this summer: Bill and Doris Hunter enjoyed the beauty of the landscape at Hawaii, our new state; Enos Curtin explored the wilds of our other new state, Alaska; Dick and Mrs. Loengard flew to Paris where they picked up an automobile to tour Europe; Dix and Mrs. Proctor celebrated their 25th wedding anniversary in Bermuda.

The 1917 luncheons on Thursday of the first full week of each month continue to bring out 1917ers in the New York area, under the guidance of Dix Proctor. The August meeting brought out the following to celebrate Joe Littlefield's retirement from Johns-Manville: Dick Loengard, Ed Aldrin, Bob Erb, Bill Neuberg, Enos Curtin, Joe Littlefield, and M. C., Dix Proctor. In July a surprise visitor was Jim Spalding, retired, and looking as hale and hearty as ever. By the way, Joe Littlefield deserves honorable mention since it is reported that he will probably be a proud father for the second time within the past five or six years. And another indication that Joe is going to keep constructively active comes from the September 1959 issue of the *Members' Bulletin* of the Controllers Institute of America which reads as follows: "W. Joseph Littlefield, since 1946 controller for financial analysis, Johns-Manville Corporation, New York, has been appointed research director of the Controllers Institute Research Foundation, Inc. (formerly Controllership Foundation, Inc.). From 1937 until his retirement, this month, Mr. Littlefield served Johns-Manville in various research and executive capacities, including director of forecasting, production scheduling and inventory control; product manager for friction materials, transportation department; and budget manager." Whenever a person is in good health, it is a fine thing to be able to use his experience in some useful way.

Ken Richmond, who is celebrating his 65th birthday this year, writes: "There has been no lightening of my work, and I am under contract for two more years, with no assurance that it will end there. When I was an undergraduate, I thought to retire at age 55 and escape this fate. But I have good health, a fortunate family, and I like what I am doing." Ken is vice-president of Abraham and Straus Department Store, Brooklyn, N.Y.

Here are a few random notes: Jack Wood is frequently in the sailing news, not only with Tech dinghies but also with the races at Marblehead, Mass. Did you

note in The Tech Review for July that John R. Coffin was given the grade of fellowship by the American Institute of Electrical Engineers? Dad Wenzell continues to get into the news in connection with the continuing controversy in the halls of Congress over the Dixon-Yates contract for which Dad was a consultant. Heine Gartner continues his hobby of making and selling colonial reproductions, and restoring antiques at his home at Wellfleet, Cape Cod. Heine says he expects to live to be 100 or more, and scorns the rat-race victims. Your secretary has been busy in retirement helping the Greater Hartford Chamber of Commerce to organize a non-profit, modest-fee Business Improvement Service with the objective: "to assist Greater Hartford business in solving the many problems of management incident to making and keeping their operations profitable, thus contributing to the general business health of the area." This service is made possible by the willingness of corporate officers, college professors (including our own Barney Dodge of Yale), and professional men, to make their services available at low cost in a civic project of this kind, whereas they would not do so as individuals or as members of a private enterprise conducted for profit, except at a prohibitive cost. This is one of a number of similar enterprises in various cities of the United States, manned in most instances by retired business men of experience, which have served the double purpose of keeping retired men of experience active and helping bolster the health of sick business, or in giving services in projects of civic interest.

This month's anecdote recalls how, wearily, the husband entered the house at the close of the day and slumped into a chair. "What on earth is the matter dear?" asked the wife. "Well you know those aptitude tests they are giving at the office. I took one today, and it's sure a good thing I own the company." — W. I. McNEILL, *Secretary,* 107 Wood Pond Road, West Hartford 7, Conn.; STANLEY C. DUNNING, *Assistant Secretary,* 21 Washington Avenue, Cambridge 40, Mass.

'18

Life is a game in which we are all anxious to score, and in which there are an amazing number of ways to do so. For example, the following scored "present" at the Alumni banquet last June: Eli Berman, Sidney and Mrs. Blaisdell, Tom Brosnahan, Lester and Mrs. Conner, Saxton and Mrs. Fletcher, Clarence and Mrs. Fuller, Alfred and Mrs. Grossman, Albert and Mrs. Haertlein, Tom and Mrs. Kelly, John and Mrs. Kilduff, Nat Krass, Gretchen Palmer, Alan and Mrs. Sanger, Max and Mrs. Seltzer, Bill and Mrs. Wills.

Of these, several have recently scored in other ways. Sax Fletcher has set 1960 as the finish line for his position as vice-chairman of the Midland Ross Corporation and, exhibiting the same sound judgment which has characterized his career, will retire to his ancestral farm at Greenfield, N.H.

Sax has six grandchildren, divided evenly between the two kinds. Bill Wills has scored with an address before the Cleveland Chapter of the American Institute of Architects. His subject was "Trends in House Design." He said, among other things, that the demand at the present time seems to be for a traditional sort of a house with a pitched roof with large windows facing the sun or strategic views. The home builder of 1959 seems to want the best of the old combined with the best of the new. He believes that all architecture should be regional, that is, houses should look as if they belonged where they are built. He believes that outdoor living is important but in our climate he thinks a house is more important to live inside of than outside of; 90 percent of his clients have summer houses anyway. He believes that houses should be functional and planned to fit the family needs, but he does not believe that it is right in so doing to ignore the vast heritage of the past. He believes that proper house design is a triumph of mind over money. He believes an architect should design houses for his clients to live in, love, and be happy in, not as a monument to himself. In domestic work, Bill says there has been a definite swing away from the ranch house and the split level house. Recent polls taken by the largest consumer magazines indicate a decided preference for the Colonial.

Tom Brosnahan has scored with a short article in a trade magazine called *Variety Store Merchandiser,* titled "Annual Fiscal Comparison Variety and General Merchandise Companies." (Your scribe is not responsible for the sins of that syntax.) He also scores as a member of the 17-day European trip sponsored by the Advertising Club of New York. There were 82 in the party, and he sent me a 16-page typewritten account of their visit to Rome, Geneva, Paris, London, and Dublin. He goes into detail as to the places visited, such as the Vatican, Geneva headquarters of the United Nations, Notre Dame Cathedral (which took a century to build), the British Houses of Parliament, Westminster Abbey, and Trinity College in Dublin, which is almost 400 years old. (Nothing to boast about. The University of Iceland celebrated its thousandth anniversary a quarter century ago.) The trip apparently included a visit to Stoke Poges near London, for Tom quotes from Grey's Elegy written in the churchyard there. He misquotes a line, too, as do thousands of others. What Grey said was "Awaits alike the inevitable hour." He did not say "await alike," the point being that the inevitable hour does the awaiting; not "the boast of heraldry," etc. (Before disputing me please see Stevenson's "Home Book of Verse" and what he says about it in the introduction. Also use your own reasoning powers.)

The Seltzers and the Grossmans scored with a visit to the Magouns on July 12. We tried to show off our pet chipmunk, but he refused to come when called because of the Seltzer toy poddles, Satan and Ariel, who have been chronicled in these columns before. Al has four grandchildren. Julie Howe scored with a trip to California to visit his grandchildren and their father. I had a letter from Yale Evelev, who says about his own recent scoring, "Our cruise to Tahiti, New Zealand, Australia, and Honolulu seems like ancient history, memories and experiences tucked away in the back of our cranium to be brought out upon special occasions. Only after one has lived through all these new experiences does one try to evaluate them against the investment. Now that we have spent a month in our 50th state we should start to lay plans for a visit to our 49th. We have not been there yet. In the meantime we have been promising ourselves that should we tour New Hampshire we would drop around Jaffrey — it must be beautiful there."

My grandsons remind me that my own score of having been in every state of the Union has been ruined by the recent additions. However, there are other compensations. Disregarding all claims to modesty, I have some kind of score as the lapidary for a new gem: my thirteenth published book entitled, "The Teaching of Human Relations." It was written at the request of Vannevar Bush who felt that the methods I used in my M.I.T. classes should be made available to anyone interested in the subject. And Dr. Bush generously wrote an introduction from which the publisher (Beacon Press) selected the following quotation to be used in advertising the volume. "If this book were just another use of the case method, it would be of little importance . . . But it proceeds far beyond the mere use of case methods as they are usually employed. . . . In Professor Magoun's class I saw displayed some of the finest teaching I have ever seen, finest because I believe it had a more lasting and beneficial influence on the lives of many young men than I had seen produced by any similar effort." If you would ask me, which nobody will, I think the material in the Appendix alone is worth the full price of the book. My fourteenth volume, dealing with "Cooperation and Conflict in Industry" (Harper) is already in galley proof and will have gone to press before these notes do. And that, gentlemen, concludes the scoring for now. — F. ALEXANDER MAGOUN, *Secretary,* Jaffrey Center, N. H.

'19

Well, our 40th reunion has come and gone. A wonderful time was had by all who attended — so much so, that all present requested another reunion two years from now, ahead of the scheduled one in five years.

First of all, congratulations to the Class of 1919 for the generosity and spirit shown by our contribution to the Institute! We were able to present Dr. Stratton with a check of $75,000 at the banquet in Boston on Monday, June 15. The gift is a tangible expression of the wonderful class spirit of 1919. And this spirit was surely evident at Wentworth-by-the-Sea on June 12. At least 75 persons attended the reunion. The Class started assembling on Thursday and by Friday afternoon everyone had arrived, most of them in time to participate in events on the putting green and the pitch and putt course.

Quite a few of the men enjoyed golf on Friday, Saturday, and Sunday. There was dancing Friday evening for those still able to amble around. Saturday evening, the class banquet was preceded by a cocktail party at which prizes were given out for those members who had excelled in some field of endeavor.

Mr. and Mrs. Bernard Coleman received a prize for the family who had come from the farthest point. For the greatest number of grandchildren there was a tie, and prizes were given to the Marshalls, McCartens and Moodys who each have nine. Mrs. Marshall received a prize for the youngest grandchild. Door prizes went to the Sorensons. For sports events, prizes went to: Mrs. Donald Way, for women golfers; Mrs. Sorenson, Rogers, and Loucks, for women's putting contest; Mrs. Bartlett, for pitch and putt contest for women; for low gross, Karl Rogers, with an 81, and Lloyd Sorenson, low net, with a 62; for the men's putting contest, Jake Lichter with 38 putts; and pitch and putt for men, Ben Bristol.

Dr. Stratton and his wife arrived Saturday afternoon in time for the cocktail party. Don Way was master of ceremonies at the banquet, and Dr. Stratton was the principal speaker. He spoke very interestingly of the future ahead at the Institute.

The following members attended the Alumni banquet on Monday at the Insti-

tute: Mr. and Mrs. Arthur H. Blake, Mr. William H. Banks, Jr., Mr. Ray H. Bartlett, Mr. and Mrs. Charles A. Chayne, Miss Marion Daniels, Mr. and Mrs. Everett F. Doten, Mr. Jackson G. Fleckenstein, Mr. and Mrs. John J. Hanson, Mr. Wilfred O. Langille (who was chairman of the reunion committee, and presented the 40-year gift of 1919 to the Institute), Mr. and Mrs. George W. McGreery, Mr. and Mrs. James R. Moore, Mr. and Mrs. Ellsworth G. D. Paterson, Mr. Maurice H. Role, Mr. and Mrs. Edgar F. Seifert, Mr. Paul D. Sheeline, and Mr. Stanley Weymouth.

Max Untersee, who could not attend the reunion, wrote that he has been in California for 15 years, working for the Air Force Ballistic Missile Division, Headquarters Air Research Development Command in Inglewood. He is the sole architectural consultant in this field for the missile installations in various sections of this country. In addition, he is president of the San Gabriel Valley Region of the Model A Restorers' Club, and his Model A was purchased in York Corner, not far from Wentworth.

Tim Shea underwent an operation in the spring, and although feeling fine, was unable to attend the reunion.

Franklin Adams wrote that most of his work was with T.V.A. in east Tennessee. His wife is recovering from a brain operation. He also reminds the Class that he won a copy of *Technique* at our 25th reunion, in which Kelley wrote a little verse starting "most are fat and fifty."

It is with sadness that we report the death of Freddie Given on June 25, at Albuquerque, N.M. Those who were at the reunion heard of his serious illness, and sent a message from all of us. The following is taken from *News Briefs* of the Sandia Corporation: "Mr. Given came to Sandia Corporation as director of apparatus engineering from the Bell Telephone Laboratories in New York City. In 1956 he was appointed vice-president, research and development technical services and was named vice-president, administration, in January of this year.

"Mr. Given joined the Western Electric Company in 1919 and spent the next six years supervising a group of engineers developing coils and capacitors for telephone apparatus. From 1925 to 1952 Mr. Given held various supervisory positions with the Bell Telephone Laboratories and was assistant director of apparatus development at the laboratories prior to joining Sandia.

"Active in professional fields, Mr. Given was a member of the American Institute of Electrical Engineers and the Institute of Radio Engineers. He served as Chairman of the U.S. Mica Mission to the United Kingdom in 1943 and was a consultant for the War Production Board from 1943 to 1945. He served as chairman of the panel on components, Research and Development Board, DOD, 1947-1953 and was a member of the advisory group on reliability of electronic equipment, DOD, 1951-1954. He was a licensed professional engineer in New York and New Mexico.

"A graduate of the Massachusetts Institute of Technology and Harvard University with bachelor of science degrees, Mr. Given was named Mr. M.I.T. of New Mexico in 1958. He was chairman of the M.I.T. Regional Conference held here in February, exploring 'The Role of the Southwest in Engineering.' "

Please note the following changes of address: Robert Insley, 42 Old Middletown Road, Nanuet, N.Y.; John H. C. Penhallow, 1801 N. Adams Street, Arlington, Va.; Alfred G. Hoffman, Box 90, Wasco, Ill.

Through the Alumni Office, we have received news of the death of Eliot H. Bryant, but have no further details at this time.

You will note the change in my address. Mail addressed to The Lummus Company will still reach me, but, as of May 15, I retired from the Lummus Company. I am still connected with them as a sales consultant, on a part-time basis. In addition, I am now a consulting editor of *The Refining Engineer*. I also publish the handbooks of C. K. Smoley and Sons, Inc., time savers for engineers, and in my spare time am trying to break 80 on the golf course. It is a relaxing change from commuting to New York. — EUGENE R. SMOLEY, *Secretary*, 30 School Lane, Scarsdale, N.Y.

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Already there is heartening evidence of interest in the 40th reunion. Buzz Burroughs made a special trip to Alumni Day for the express purpose of getting plans under way; and a group of us met with him in the afternoon to discuss plans. Buzz is going to be a great reunion committee chairman and the 40th is destined to be the best reunion yet. Most of you who have attended throughout the years will agree that reunions are better each time, and this one should prove no exception. You'll get all the details in due course.

Welcome word from Pete Ash contains assurance that he will be on hand for the reunion. Pete spends the winters at his place in Beaufort, S.C., where he enjoys bird shooting. He says he used to see Warren Chaffin down there once in awhile, but hasn't seen him for several years. How about a word from you, Warren? Pete reports that he had a wonderful and successful bonefish and tarpon fishing expedition at Isle of Pines, off Cuba, in mid-March.

Another one who promises to be on hand is Sandy Sanders of Wytheville, Va. Sandy was thoughtful enough to provide some information about himself for his classmates in response to Norrie Abbott's class letter. He started in with A.T.&T., then became associated with a firm of electrical contractors in Bristol, Va. When the depression hit, he filled in his time by getting an M.S. degree in electrical engineering at Columbia's Engineering School; after which he became a consulting engineer for anthracite coal mines, and later did general consulting work. During the war he was with Hercules Powder Company, building munitions plants. After that he was a research associate at Columbia, developing special protective devices for mining operations. For the last dozen years or so he has been a consulting engineer at his present address and has been active in local affairs, being president of the Rotary Club, president of the Chamber of Commerce for a time, and a vestryman at St. John's Episcopal Church. Sandy is a director of several corporations, among them the Smith Oil Company and the Farmer's First National Bank of Wytheville.

Still another who promises attendance at the reunion next year is Tony Anable who continues to be associated with Dorr-Oliver, Inc., Stamford, Conn.

Congratulations are in order to Ted Bossert, who was recently elected a vice-president of the Aluminum Company of America. He was formerly chief metallurgist and chairman of the company's research and development committee. Congratulations are likewise due to Bob Sumwalt who has been named president of the University of South Carolina. Bob has been acting president since December, 1957, and according to the board of trustees has "performed the duties in such an excellent manner the board unanimously named him president." Bob has been connected with the University for 33 years and was long dean of the School of Engineering. Commenting on his election, Governor Hollings says, "This is a great day for the University of South Carolina. Dr. Sumwalt has a record of distinguished service and devotion to the University. We can look forward to an era of continued progress under his leadership." In 1946 the University of Delaware conferred on Bob an honorary doctor of science degree. He has been consultant in the construction of numerous University buildings and the stadium. He is past chairman of the State Planning Board and the State Board of Housing, and a member of the State Board of Engineering Examiners. During World War II he was director of military training programs at the University and served on the State Defense Council and the State Committee on Nuclear Energy.

Don Kimball has retired from Eastman Kodak Company where he was manager of the paper manufacturing division at Kodak Park in Rochester. Don had been with Kodak more than 30 years. His home is at 111 Old Mill Road, Rochester, N.Y. He has two sons. All of us wish him many years of health and contentment. Ernie Bangratz recently moved to Wayland, Mass. Amasa Castor is back in Manchester, N.H., address 91 Bay St. Josh Welch is now in Menlo Park, Calif., address 43 Claremont Way. Robbie Robillard is in Sarasota, address 407 Hernando Avenue. Professor George Manning is back from Brazil and at the old home stand at the Institute. Others who have foresaken the north for Florida are Charlie Klingler who is in Ft. Lauderdale, and Freeman Dyke who is in Jupiter. Dan Lord's wife, Vivian, is prominent in D.A.R. circles and is also famed as a genealogist. Dan is superintendent of the J. S. Barnett and Sons, Inc., leather manufacturers in Lynn. His home is at 9 Pilgrim Road, Marblehead, and he has a summer home at Salem, N.H. The Lords have two sons, one of whom graduated from both M.I.T. and Lehigh, and the other from Dartmouth and Yale Graduate School. Dan can boast five grandchildren. How does that stack up with you other fellows? Perk Bugbee has seven.

Herb Federhen suffered a mild heart attack a few months ago and we are not sure whether or not he has resumed his activities as sales representative for the Glidden Company for whom he was New England representative. At any rate, we all wish him a speedy and complete recovery.

Word from Frank Badger mentions his seeing Frank Hunt in Fort Lauderdale and reports that Frank was in excellent shape. Frank Badger's letter also contained the sad news of Henry Dooley's death in Coral Gables, Fla., where he was deputy state director of the savings division for the Treasury Department. Henry had lived in Florida since 1926 and he was executive assistant to the president of the Florida Power and Light Company for a number of years. During World War II he enlisted in the Navy and was commissioned a full commander. Henry was an honorary life member of the Miami Chamber of Commerce. He is survived by his wife Charlotte whose address is 2716 Cordova Street, Coral Gables.

Norrie Abbott reports a pleasant meeting with Phil and Mrs. Byrne who were at Severance Lodge, Keezar Lake, Maine. Phil is with the engineering division of the Esso Company and lives in Westfield, N. J. He told Norrie that Jim Harrop and Carl Carlson had retired from Humble Oil Company in Texas.

Abe Shlager went to Israel to participate in cornerstone laying ceremonies for the Karl Taylor Compton Building of Chem-

istry and Chemical Engineering at the Israel Institute of Technology. John Crowley has retired from government service after a 38 year career as a research scientist. He was director of aeronautical and space research for the National Aeronautics and Space Administration in Washington. John is considered an authority in the field of aerodynamics and has served on a number of high level scientific committees, including the President's Scientific Research Board, the President's Special Board of Inquiry and Air Safety, the Guided Missile Committee of the Department of Defense Research and Development, and the President's Airport Board. He is a Fellow of the Institute of the Aeronautical Sciences. He and Mrs. Crowley reside at 4000 Massachusetts Avenue, Washington. They have two children.

Phil Rust is in Thomasville, Ga. Fred Hopkinson is in Rochester, N.Y., at 20 San Rafael Drive. Stan Harris is in Pittsburgh, at 931 Chestnut Avenue. Our old friend and classmate, William Morton Breakey Freeman may be found at Runnymede Plantation, Poplarville, Miss.

Among those present at the Alumni Day festivities last June were the following: Mr. and Mrs. Norris B. Abbott, Jr., Mr. and Mrs. Harold Bugbee, Mr. Edwin S. Burdell, Mr. and Mrs. Alan W. Burke, Malcolm S. Burroughs, Mr. and Mrs. William J. Dean, William F. Dewey, Mr. and Mrs. Jesse I. Doyle, Mr. and Mrs. James W. Gibson, Mr. and Mrs. Alfred T. Glassett, Mr. and Mrs. James G. Moir, Robert D. Patterson, Mr. and Mrs. Thomas C. Rowen, Mr. and Mrs. Edwin D. Ryer, Mr. and Mrs. L. Lee Thomas, A. B. Wason, E. Wason.

We regret to report the death of Charles T. Wilson of 12 Glen Creek Lane, St. Louis. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

'21

Greetings and welcome to volume 39 of our 1921 class notes. Salutations, also, to our new editorial chiefs, Volta W. Torrey, Editor of The Review, and Diana de Filippi, Class Notes Editor, whose admonition to cram in all the names and news that's fit to print we hasten to follow!

Alumni Day 1959, a 1921 cocktail party this month, a 1921 reunion in Mexico next March, 19 months to our BIG 40th reunion — these are headlines for the news below.

A threat of inclement weather in Boston the week before, when Maxine, your Secretary, and our son, Alfred, went to daughter Eleanor's commencement exercises at Simmons College, fully prepared us for the foul-foul weather that beset the program for the inauguration of Jay Stratton'23 and the other events of Alumni Day. Marvelous planning by the Institute authorities to meet every possible situation and perfect execution by the capable staff, who worked around the clock, enabled successive changes to the last of three predetermined schedules (for inclement, foul, and dire weather, respectively!) without a hitch. Thousands in attendance knew the formal academic procession had been shortened when the inauguration moved indoors to Kresge Auditorium, but few could have been aware of the many other changes, so well were they carried out to give everyone the enjoyable day to which we all look forward.

Sharing in the delightful inaugural were our own Gus Kinzel and Bill Sherry, who marched in the procession as Alumni term members of the corporation, Jack Rule as Dean of Students, Ray St. Laurent as a member of the executive committee of the Alumni Association. Luncheon in Rockwell Cage offered the usual opportunity for many '21ers and their wives to gather informally. We particularly enjoyed the opportunity to see Helier and Graciela Rodríguez for the first time since our grand 1921 reunion in Havana last year and the momentous happenings on that beautiful island. Of the many usual departmental functions, we were attracted to the dedication of the new Van Bush Room and the opportunity it afforded to greet our revered senior instructor in Electrical Engineering. Regretfully, the occasion also marked the retirement of Ednah Blanchard after 40 years as the head of the Electrical Engineering Department's secretarial corps. Widely known and loved by all of us, she came to the Institute in 1919 on the same day that Van Bush did and just as we were starting our professional work.

The social hour in the Armory, a peep at the attached and as yet uncompleted athletic center, dinner with 1921 seated together in the Cage and the concert by Arthur Fiedler and the Boston Pops Orchestra in Kresge were enjoyed by the following 57 members of the Class and guests: Mich and Mrs. Bawden and their daughter, the Class "baby," now Mrs. Nancy Bawden Dithmar; Nellie Carpenter; George Chutter; Cac and Mrs. Clarke and daughter, Eleanor; Josh Crosby; Ed and Mrs. Delany; Chick and Mrs. Dubé; Bill Ferguson; Harry and Mrs. Goodman; Bob and Mrs. Haskel; Sumner Hayward; Roy Hersum; Irv Jakobson; Mel and Mrs. Jenney; Algot Johnson; Gus Kinzel; Ed and Mrs. MacDonald; Leo and Mrs. Mann; Don and Mrs. Morse; Phil Nelles and daughter, Mrs. Patricia Nelles Oram; Warrie Norton; Jim Parsons; Leo and Mrs. Pelkus; Helier and Mrs. Rodríguez; Jack Rule; Ray and Mrs. St. Laurent; Steve and Mrs. Seampos; Bill Sherry and son, Dickie; Saul and Mrs. Silverstein; Ted Steffian; Harold Stose; Bill and Mrs. Wald; Dinnie and Mrs. Whelan and daughter, Mrs. Anne Whelan Dennison; Dave and Mrs. Woodbury.

If you are in or near New England as you read this, or will be close to Cambridge within the next few days, plan to attend the 1921 cocktail party on Monday, November 16, 1959, at 4:30 P.M., at the Faculty Club at M.I.T. Chairman Ted Steffian and his committee, comprising Chick Dubé, Mich Bawden, Mel Jenney, Larc Randall and Chick Kurth, have arranged a pleasing informal gathering in response to many requests for a Cambridge meeting. If you have returned the questionnaire attached to your Secretary's September letter and requested later mailings, you now have the full details. If not (and we hope you'll return the questionnaire just the same), contact Ted at the address at the bottom of this column or just take pot luck and show up anyhow. Dinner afterwards for those who wish to stay.

A 1921 reunion in Mexico is the outstanding news of the month. Planned to coincide with the 12th Annual Fiesta of the M.I.T Club of Mexico City, the reunion will extend from March 10 through 12, 1960, and may have additional 1921 events on March 13. Parties, entertainment, sightseeing trips and a colorful "Noche Mexicana" all promise an unusually good time for '21ers and their wives. Our wonderful enjoyment of the top notch 1921 reunion in Havana last year with the M.I.T. Club of Cuba presages the complete success of this reunion in Mexico. Again, the locale provides a base for extended travel at a time when Mexican spring offers a profusion of flowers and mild weather to offset our late winter. Please indicate your interest on the questionnaire enclosed with the class Secretary's letter, if you have not already done so, and return it to your Secretary right now in order to help Chick Dubé's committee complete plans and keep you advised by mail.

As we write these notes, Sumner Hayward has just phoned the details of 1921's participation in the third Alumni Officers' Conference at Technology on September 11 and 12. Packed into these two days were general and special meetings covering the activities of class, club and Amity Fund administration. Participating and living together in Baker House were: George Chutter, Sumner Hayward, Chick Kurth, Sam Lunden, Larc Randall, Ray St. Laurent, Ted Steffian and George Welch.

In August, we received a postcard from Nantucket Island's 300th birthday anniversary with the message: "We're holding the smallest '21 reunion on record — or off — here on Nantucket!" It was signed by Sumner Hayward and Harold Stose and countersigned: "Ladies Auxiliary — Betty Hayward and Louisa Stose." Sumner and Betty were enjoying the initial steps of his retirement and met the Stoses vacationing nearby. Sumner had been tendered a big party by his New York Telephone Company associates at a Brooklyn hotel in mid-July. Betty has relinquished her Simmons College class secretarial duties and they will hereafter follow their hobbies of travel, gardening, Sumner's oil painting and Betty's writing. The Haywards were hosts to San and Velma Hill of Wilmington, Del., in September during the Hill's vacation trip to Canada to visit Velma's family.

Munnie and Alex Hawes were hosts to Maxine and your Secretary at their Sea Girt, N.J., home and at the Manasquan River Country Club during the summer. We missed seeing the San Hills, who had visited the Hawes family during a stay at Ocean Grove. Munnie contributed his excellent color slides of our Havana reunion to the class collection and promised to take more for us in Mexico next March. Ray and Helen St. Laurent report a delightful trip to Ireland and England during the month of May, illustrated by "leprechaun" postcards they sent, which tell of the country, the Abbey Players, the friendly people and which conclude with the general observation: ". . . this is more fun than working!"

A complete surprise from out of the blue was a hurried phone call from Harry Field of Honolulu, who made a flying trip in early June to Lake Placid and New York City to attend the Rotary Club convention. We greatly regretted the inability to get together and Harry's inability to go to Cambridge for Alumni Day. He is enjoying recent retirement from the Hawaiian Electric Company and reports the arrival of a fifth grandchild. His main problem is how to schedule attendance at our 40th reunion, since he and Catharine will be in Tokyo in May, 1961, as members of the committee of arrangements for the Rotary convention there. His plan to fly direct from Tokyo to our reunion site near Cambridge should entitle the couple to an award as a "first" in this category! Right on the heels of Harry's call came one from Helier and Graciela Rodríguez, who were in New York on their way to Alumni Day.

Bob and Helen Miller's youngest daughter, Jeanie, was graduated from grammar school in June, following their return from son Bob's graduation from the Rochester Institute of Technology's five year co-operative course in mechanical engineering. Young Bob is now a management trainee at Continental Can's Paterson, N.J., plant. Zambry P. Giddens has been named to a new post as executive vice-

president of the Dynamics Corporation of America. Zam had been assistant to the president of the Servo Corporation of America, New Hyde Park, N.Y., and executive vice-president of a Servo subsidiary, the Electronic Switch and Signal Company.

Ernest Henderson, President of the Sheraton Corporation of America, is a director of the American Management Association. Andrew Deane is with the U.S. Steel Corporation in Pittsburgh, Pa. Henry C. Nelson is on the staff of the Windham High School in Willimantic, Conn. Donald W. Randolph has retired from the presidency of Structural Fibers, Inc., of Gates Mills, Ohio, and has moved to a new home at 925 Via Panorama, Palos Verdes Estates, Calif. William T. Smith is with Ford, Bacon and Davis, Inc., New York City.

Oliver L. Bardes reports his home address as 2627 Grandin Road, Cincinnati 8, Ohio. W. Robert Barker now lives at 478 Beattie Avenue, Lockport, N.Y. Pierre F. Beaudry has a new home at 41 Hazelwood Avenue, Outremont, P.Q., Canada. Arthur N. Brambach lives in Bellevue, Wash., at 12454 S. E. 25th Street. Ralph E. Ferdinand has moved from Milton, Mass., to a home on Preston Terrace, Marshfield, Mass. Michael Treshow says his home address is 2075 Sea View Avenue, Del Mar, Calif. New addresses are available from your Secretary for Charles B. Dicks, Jr., Hyman J. Levensohn, Howard L. Ross, Brigadier General Don G. Shingler and David L. Steidlitz.

Herbert C. DeStaebler of Warner Lambert Company, Lititz, Pa., has sent several most welcome letters and cards during the summer. In June, he wrote: "Reporting on a dinner of the M.I.T. Club of Central Pennsylvania in Carlisle, Pa., I met Charles W. Richards, X. Dick is running a paper mill at York Haven, Pa., for International Paper Company. Central Pennsylvania is a good group." Later, Herb wrote he expected to be in Lima, Peru, and inquired as to the address of his old East Machias summer camp buddy, Felipe P. Ayulo'22. In August, we received the following letter from Herb, on the stationery of the Hotel Excelsior Copacabana in Rio de Janeiro, Brazil (1922 please note): "I had a very pleasant visit with Felipe Ayulo, which included a delightful dinner in his magnificent home and meeting his lovely wife, Maria. They have no children. We just got going on old '21ers like Jack Rule and Glenn Fargo (by the way, Helen and Glenn visited me in Lititz two days before I left for Peru) until we hit on Helier Rodríquez — which ended casual reminiscing, since Felipe and Helier were very close friends. Felipe is in perfect health. He is *Gerente* of the *Banco Internacional* and is an influential man in Lima as well as in all of Peru. Thanks for scouting up his address for me. I thoroughly enjoyed seeing him."

Edmund G. Farrand, our active class agent and owner of Farrand Farms, Colonial Plantation, Leesburg, Ga., gave us a most happy surprise with a long distance phone call from his home to discuss class affairs. Ed had planned to be in Cambridge for the Alumni Officers' Conference and a class officers meeting but had to call it off. He reported good health and much work to do and sounded no different from his old busy and congenial self. He can well be proud of the outstandingly large sum which members of the Class gave to M.I.T. last year, which accrues to the credit of the Amity Fund and to our own 40th reunion gift to be presented to Technology on its hundredth anniversary in 1961. Ed has done a stupendous job as class agent and we know you join in this public expression of thanks to him.

Irving D. Jakobson, chairman of our 40th reunion gift committee, wrote concerning his administration of that office and also noted that he and Ruth had sailed to Maine in their boat this summer and enjoyed a day's visit with Ray and Helen St. Laurent at the latter's home in Vinalhaven. Edouard N. Dubé, Boston consulting engineer and chairman of the reunion in Mexico committee, has reported details of his committee meetings and contacts with Cambridge and the M.I.T. Club of Mexico in setting up the program for you for next March. Edwin T. Steffian has also written the details of the November cocktail party. Melvin R. Jenney's 40th reunion committee reports completion of almost all but last-minute details. The site being selected is near Cambridge so attenders will be able to join in Technology's centennial party on campus. The program will also provide for inclusion of the ladies. Garvin Bawden, chairman of our special gifts program, has prepared a detailed program, co-operating with Ed Farrand, Larc Randall and Irv Jakobson. Mich deserves congratulations for the almost 100 percent increase in special gifts from the Class this past year, which resulted in our fund total being the second highest of all the classes. This is your record, resulting from your generosity and for which you are entitled to be proud and to receive hearty thanks from M.I.T. and our entire Class.

It is with profound sorrow that we record the passing of seven members of 1921 and extend to their families sincere sympathy from the entire Class.

James Jackson Birnie of Detroit, Mich., passed away in May, 1951. He was associated with us in Course X and had been with the American Telephone and Telegraph Company in Detroit and previously with the New York Telephone Company.

Joseph Darwin Nagel, Jr., died in 1956. He was associated with us as a special student. The owner and manager of Nagel Groves, citrus fruit growers and shippers in Winter Haven, Fla., he was also vice-president of the Florence Citrus Growers Association, vice-president of the Villa Lumber and Supply Company and a member of the Elks. He is survived by his wife, Mrs. Mary L. Nagel, and a son, Joseph G. Nagel.

Preston Ashley Remington died in 1958. He had been a student in Course IV and was associated for many years with the Metropolitan Museum of Art in New York City, in charge of the Decorative Arts Department and later as vice-director of the museum.

Charles Fitch Parker died in Boston on May 23, 1959. Born in Pepperell, Mass., on July 28, 1897, he prepared for the Institute at Phillips Exeter Academy. He was associated with us in Course XIII and was a member of Phi Gamma Delta. He was a private in the Marine Corps in World War I and served with distinction in the American Expeditionary Forces overseas with the 17th Company, 5th Regiment of Marines, in the St. Mihiel, Champagne, Bois-de-Belleau and Meuse-Argonne offensives, as well as in the army of occupation. He had been engaged in design work with the Foster Wheeler Corporation and in the scientific division of the Boston Naval Shipyard. He is survived by his wife, the former Helen E. Brown of Lancaster, Mass.

Dr. George Thomson of Milton, Mass., the assistant director of research of Fabric Research Laboratories, Dedham, Mass., died on May 26, 1959. Born in Dorchester, Mass., on March 7, 1899, he prepared for Technology at Dorchester High School. In World War I, he was a private in the Students' Army Training Corps. At the Institute, he was a member of the Chemical Society. He was graduated with us in Courses X and X-A, including a master's degree in 1922 and a doctorate from M.I.T. in chemistry in 1930. He served as research associate and instructor in chemistry at Technology from 1937 to 1946 and was previously chief research chemist for the W. B. Wescott Laboratory. A pioneer in research on textile finishes, he held a number of patents and was the author of several technical papers. His memberships included the American Chemical Society, the American Association of Textile Chemists and Colorists, and the Richard C. Maclaurin Lodge of Masons of which he was a past master. He is survived by his wife, Mildred; a daughter, Mrs. Bonnie Wiegand; and two sons, Daryl A. and G. Roland Thomson.

Norman Douglas Conniers of Marblehead, Mass., died there on May 29, 1959. A native of Covington, Ky., and veteran of World War I, he had been associated with us in Course XV. A Christian Science practitioner, he was a member of the Mother Church of Boston, the First Church of Christ Scientist of Lynn and of Swampscott. He served on the building committee for the new church on Lynn Shore Drive. He was past president of the Marblehead Art Association, a member of the Colonel Clay Masonic Lodge in Covington, Ky., and the Honorable Order of Kentucky Colonels, Anchorage, Ky. He is survived by his wife, Mrs. Elizabeth Slade Conniers; a daughter, Mrs. Joan C. Dawe of Lake Charles, La.; a sister, Miss Garnet Conniers of Marblehead; and two grandchildren.

Lansing Taylor Carpenter was killed on July 24, 1959, when his car rolled down the driveway of his home in Haddam, Conn. He was born on September 12, 1897, in Wilkes Barre, Pa., and prepared for Technology at Andover Academy. At the Institute, he was a member of Phi Beta Epsilon, the Chemical Society, *The Tech News* staff and *VooDoo* editorial staff. He was associated with us in Course XV. He also attended the University of Paris, the Yale Drama School and received a bachelor's degree in science from Columbia University. He had been president of the B. G. Carpenter Company, a family firm in Wilkes Barre. Later, he was publicity manager for the U.S. Rubber Company, director of advertising for the Connecticut Power Company and director of advertising and public relations for the Russell Manufacturing Company. A Republican, he was elected to his first term in the Connecticut State Legislature in 1956. He was re-elected in 1958. He was active in local affairs in his home town and was a prominent yachtsman. He is survived by his wife, the former Grace Clift; three daughters, Mrs. Charles W. Page and Miss Lucile Carpenter of West Hartford, Conn., and Miss Grace Carpenter of Palo Alto, Calif.; a son, Benjamin, at home; a brother, Donald F. Carpenter'22, of Mendenhall, Pa.; and a granddaughter. We are indebted to A. Warren Norton for aid in preparing this note.

Please complete and return the questionnaire attached to the class secretary's letter you received in September. — CAROLE A. CLARKE, *Secretary*, Components Division, International Telephone and Telegraph Corporation, 100 Kingsland Road, Clifton, N. J. EDWIN T. STEFFIAN, *Assistant Secretary*, Edwin T. Steffian, Architect, 11 Beacon Street, Boston 8, Mass.

'22

Greetings from your relaxed and rested Secretary. After the most delightful, sunny,

cool, summer season in Buffalo and on Lake Erie, the Fergusons are ready to go back to work with two sons who support their father in the electrical business. A letter enclosing pictures from Abbott L. Johnson of Warner Machine Products, Muncie, brought back our thrilling times at Parke Appel's house in Dover. Ab tells of his enjoyment in having Betty become intrigued by the Class and "their good looks, fine manners, and thoughtfulness." Ab is feeling better after taking physiotherapy and doing exercises while swimming. He has established a new division of his company, called the Warner Chemical Products, to manufacture organic chemicals.

To continue with the report on the June 14 meeting; a cocktail party and dinner were given by our president and his delightful wife and daughter, Joan. Those who were able to attend now hope that this will be an annual affair. This includes: Mr. and Mrs. Parke D. Appel, Miss Joan E. Appel, Mr. and Mrs. Edward A. Ash, Mr. and Mrs. Abbott L. Johnson, Mr. and Mrs. Warren T. Ferguson, Mr. and Mrs. C. Yardley Chittick, Mr. and Mrs. A. Robert Tonon, Mr. and Mrs. James Duane, Mr. and Mrs. William A. Riley, Mr. and Mrs. Morris H. Gens, Colonel and Mrs. Randall J. Hogan, Mr. and Mrs. Thomas H. Gill, Mr. and Mrs. Jack Teeter, Mr. and Mrs. William H. Mueser, Miss Gayle E. Mueser, Miss Caryl A. Mueser, Mr. and Mrs. Francis M. Kurtz, Mr. and Mrs. John M. Goodnow, Mr. Frank H. Wing, Mr. Fred N. Dillon, Mr. Whitworth Ferguson, Mr. Samuel H. Reynolds, Mr. Fearing Pratt, Miss Marjorie Pierce, Mr. Ken Southerland and Mr. Wilfrid N. Thomson. In addition, those attending Alumni Day at the Institute included: Mr. and Mrs. Donald F. Carpenter, Mr. and Mrs. Robert H. Brown, Mr. and Mrs. Harold O. Berry, Mr. and Mrs. Ronald G. MacDonald, Mr. and Mrs. Francis W. Spalding, Mr. and Mrs. C. Randolph Myer, Mr. and Mrs. C. Hall Baker, Dr. and Mrs. Leon S. Medalia, Mr. and Mrs. C. George Dandrow, Mr. and Mrs. Norman P. Randlett, Mr. and Mrs. Hyman L. Rosengard, Mr. and Mrs. Theodore T. Miller, Mr. and Mrs. Minot R. Edwards, Miss Florence W. Stiles, Mr. Joel D. Harvey, Mr. G. Dewey Godard, Mr. Andrew S. LaPenta, Mr. Norman Gardner, Mr. Earl H. Eacker, Mr. Hugh M. Shirey, Mr. Clayton D. Grover, and Mr. Julian Lovejoy. It was wonderful to get together with the finest class of the Institute. To those who were there, be sure to come again. To those who were absent, try to make it next year.

Parke Appel and Don Carpenter phoned during the summer to tell of their increased activity on special gifts for the Class of '22. The general feeling of the group on Alumni Day was to make our goal $600,000 for 1962. Don has agreed to accept major contributions from all who volunteer and to present facts and figures to the more bashful members. More on this subject later. The general Alumni campaign indicated that 40 percent of our Class participated, of the 774 on the active list. A very complimentary financial review of Johns-Manville Corporation has been recently issued, indicating the excellent work of George Dandrow. George's brother, Ed, is being transferred to the Buffalo area and we look forward to the future family gatherings here on the Lake. Some of you may have heard or read the speech by Donald F. Carpenter entitled "New Frontiers, 1959." It tells of the development of cellophane and its expansion into the area of Topeka, Kansas. John H. Teeter invites his friends to call him at the Damon Runyon Memorial Fund in New York to obtain seats for any performance of the best shows. It is a service of their foundation. Jack might also introduce you to his lovely wife, Christine McGuire.

Your Secretary, in his recently acquired role as president of the Buffalo Chamber of Commerce, will continue to talk about the fine weather, the outstanding people, and the great business opportunities presented here in Buffalo. He will leave for Moscow and Berlin around Labor Day and, thereafter, submit a measure of expert advice on the foreign situation. Myer L. Alpert of Newton visited Europe and the offices of the Hebrew Immigrant Aid Society during the early summer. Oscar Horovitz was there at the same time. In writing from Madrid he told of showing his M.I.T. film, "The Social Beaver," to the M.I.T. Club of Spain. He met Everett and Mrs. Vilett there at the Hotel Wellington with plans to meet Werner Schoop in Zurich. Oscar's interesting trip also included Portugal, Morocco, Israel for filming, Switzerland, Denmark, Sweden, Norway, Scotland, and Ireland. David M. Broudy announces the removal of his law office to 225 Broadway, New York City. Clate Grover is still putting out stainless steel and Monel. To stop tough problems, he sent a special Monel gadget that saves many a half bottle of ginger ale.

Francis M. Kurtz writes from a temporary address: P. O. Box 2512, Delray Beach, Fla. Frank invites us all to his new home and writes the following: "Our younger son, Richard Crompton K., was married on June 27, as per enclosed clipping from *The Times*. They are now living in Milwaukee. Our older son, F. M. K., Jr., was married last September, and we expect to be grandparents shortly. He lives in Lansdowne, Pa., and although we had lived in Bronxville for nearly 30 years, I decided it was time to retire and have done so, here at Delray Beach, Fla. We are now living in a small furnished apartment, while we are building a new home in the Lake Ida section of Delray Beach. We won't be in the new house until Thanksgiving, so are taking advantage of our few months of gypsy existence by visiting all over the country. Expect to leave here early September to be gone about a month, visiting family and friends in Pennsylvania, New Jersey, New York, Connecticut, New Hampshire, Vermont, the Adirondacks, Rochester, Chicago, Milwaukee, and Nashville. Then back to Delray to see if they have gotten along any faster with the house than if we were here. I was glad to have made the 1959 Alumni Day, as my visits to Cambridge will be less frequent from here than from Bronxville. It was good to see so many of the Class back for the festivities, and I thoroughly enjoyed every minute, from Parke Appel's opening party to George Dandrow's benediction. I guess my next visit with the Class will be the 1962 reunion."

Your Secretary returned last week from a trip to Leningrad, Moscow, Berlin, Stockholm, and Paris. You may expect the class notes to be full of Soviet teachings and German proverbs for the rest of the year.

We note, with sympathy to their families, the following deceased members: Donald S. Laughlin, Portland, Maine; William I. Bates, Framingham, Mass.; Viatcheslav V. Efimoff, Niagara Falls, N. Y.; Isaac G. Lycett, Owings Mills, Md.; Kenneth M. Vreeland, Hartford, Conn.; James T. Mullin, West Chester, Pa.; Gregory M. Loukianoff, Pittsfield, Mass.; and Dr. Eli Lurie, Los Angeles, Calif. — WHITEWORTH FERGUSON, *Secretary*, 333 Ellicott Street, Buffalo, N. Y.; C. GEORGE DANDROW, *Assistant Secretary*, Johns-Manville Corporation, 22 East 40th Street, New York 16, N. Y.

'23

Monday, June 15, was a memorable day for the Class of 1923 when our own Julius Adams Stratton was inaugurated the 11th President of M.I.T. Several members of our Class had leading roles in the inauguration: William L. Stewart, Director of the Union Oil Company of California, was chief marshal; other marshals were Hugh S. Ferguson, President of the National Research Corporation, and Horatio L. Bond, Chief Engineer of the National Fire Protection Association and President of our Class. Marching in the procession were John E. Burchard, Dean of the School of Humanities and Social Sciences, and Dr. William Allis, Professor of Physics at the Institute.

Members of our Class serving under Dr. Stratton on the faculty include: Dr. Bernard E. Proctor, Head of the Department of Food Technology; Nathaniel H. Frank, Head of the Department of Physics; Edward R. Schwartz, Head of the Textile Division; Richard H. Frazier, an Associate Professor of Electrical Engineering; and Gerald Putnam, an Assistant Professor of Engineering Graphics.

Class members who attended the very impressive ceremonies included: Mr. and Mrs. Edward S. Averell; Dr. and Mrs. William Allis; Mr. and Mrs. Horatio L. Bond; Mr. George W. Bricker, Jr.; Mr. John E. Burchard; Mr. and Mrs. Miles N. Clair; Mr. and Mrs. Robert T. Colburn; John A. Dow; Mr. and Mrs. Thomas B. Drew; Mr. and Mrs. Hugh S. Ferguson; Mr. and Mrs. Joseph Fleischer; E. Louis Greenblatt, Mr. and Mrs. Franklin K. Haven; Mr. and Mrs. Herbert L. Hayden; Mr. and Mrs. Edward J. Healy; George A. Johnson; Mr. and Mrs. Harry Kalker; Mr. and Mrs. Egon Kattwinkel; Mr. and Mrs. David Kaufman; Mr. and Mrs. Forrest F. Lange; Mr. and Mrs. Howard A. Lockhart, Bertrand A. McKittrick, Mr. and Mrs. John J. Murphy; Mr. and Mrs. Paul R. Plant; Mr. and Mrs. Bernard E. Proctor; Mr. and Mrs. Howard F. Russell; Mr. and Mrs. David W. Skinner; Mr. and Mrs. Francis P. Squibb; Mr. and Mrs. Julius Stratton and family; Mr. and Mrs. Lyman L. Tremaine and family; Mr. and Mrs. Allard M. Valentine; Roy C. Wagner; Dr. Dorothy W. Weeks; and Eduardo Icaza.

Dr. Bernard E. Proctor, Head of the Department of Food Technology and Director of the Samuel Cate Prescott Laboratories of Food Technology at the Institute, was one of the featured speakers at the New England Council Conference held at Middlebury College, Middlebury, Vt., June 11 and 12. His subject was "New Foods for Your Future." Incidentally, that portrait of Bernie is excellent and well worth dropping in to see any time you are in the vicinity of the Institute.

Bernie Proctor advises that he had lunch with Earle Griswold in Rutland, Vt., on his way back from the conference.

Martin L. Tressel has been doing a fine job this year in an effort to create interest in the game of tennis and to develop the juniors. Martin is national chairman of the Junior Tennis Development Committee of the United States Lawn Tennis Association. As a result of his efforts new junior tennis leagues have been established in many parts of the country.

Eger V. Murphree, President of the Esso Research and Engineering Company, served on the General Advisory Committee to the United States Atomic Energy Commission which late last spring was called into special session for the purpose of reviewing the problems presented by radioactive fallout and the activities of the

Commission, as well as those of the Department of Defense and other groups pertaining to these problems.

Charles B. Myers II is now engaged in appraisal work for the New Jersey State Highway Department and in real estate and insurance. Francis H. Wyeth recently returned from a trip to Europe for Leeds and Northrup. Broderick Haskell, Jr., is working for International Finance Corporation, an affiliate of the World Bank. Professor William P. Allis conducted a course on plasma dynamics at the special summer session at the Institute.

An article appeared in the April, 1959, issue of the *Delta Upsilon Quarterly* concerning James S. McDonnell, Jr., founder and President of the McDonnell Aircraft Corporation. A short article entitled "Space Capsule for the First Man to Go 'Out of This World' to Be Designed and Built by a Delta U," states that the National Aeronautics and Space Administration has awarded the contract for designing, developing, and producing the capsule in which the first American will go out into space and into orbit, to McDonnell Aircraft Corporation of St. Louis.

Milton O. Orwin is chairman of the Community Chest–Red Cross Drive in Kalamazoo, Mich., and finds this new assignment, along with being a retailer, not inconsistent with holding an engineering degree from M.I.T. Currently Milton is vice-president of the Kalamazoo Pants Company which has 18 stores. He leads a very active life in his community, including service on the boards of the U.S.O., Heege Community Center, Rotary Club and the Bronson Hospital.

Charles S. Keevil has joined Helen Edwards and Stall Agency, Los Angeles, as specialist in recruitment and placement of scientific and engineering personnel. After receiving a Sc.D. degree in Course X in 1930, he served as department head in chemical engineering at Oregon State and Bucknell, and spent two years during the war with the National Defense Research Council. For the past 14 years he has been with Arthur D. Little, Inc., industrial consultants, where he was formerly personnel director and a senior staff member. He and Mrs. Keevil live in Brentwood. His son, Charles S. Keevil, Jr., trained at Harvard Medical School and Massachusetts General Hospital, and is practicing internal medicine in Concord and Lincoln, Mass. There are four grandchildren, three boys and a girl.

Ray Starr sent me an announcement of his son's (Norton Lambert Starr) wedding to Irene Clair Stiefel in Kansas City on July 30. Ray had his son with him at our 35th reunion as many of you will remember. Norton is a graduate student in the Mathematics Department at M.I.T. and Irene is a junior at Smith.

Tex Beretta sold his banking interests in San Antonio and retired from active management of the First National Bank of San Antonio. He will not have too much time on his hands as he is a man of many interests. He is a successful practicing professional engineer and is retaining his interest in that business. Currently, Tex is chairman of the Texas State Board of Registration for professional engineers. A portion of his letter reads as follows: "I have set up some personal offices in the Travis Building, which I own, and the address on this letterhead (902 Travis Building, San Antonio 5, Texas) will be my mailing address from now on. I have set up some very comfortable and rather luxurious offices and certainly intend to enjoy considerable leisure time, punctuated only with the management of my personal affairs."

We regret to report the following deaths since the last issue of The Review: Richard Bowditch, internationally known figure in the coal, oil and transportation field and former President of the United States Chamber of Commerce, died on August 1, 1959, at the age of 58; Joseph L. Parker died on August 11, 1959, and Channing P. Clapp, who had been connected with the Carborundum Company for many years, died on June 19, 1959.

Please note the following address changes: Michael F. Boyle, 445 Longmeadow Street, Longmeadow, Mass.; Benjamin P. Bullman, 9 Sligo Road, Yarmouth, Me.; Dr. Robert V. Burns, 902 South Greenway Drive, Coral Gables, Fla.; Henry F. Culver, 324 The Lane, Hinsdale, Ill.; James W. Daniels, 3000 Crites Street, Ft. Worth 11, Texas; Fernando de la Macorra, Manuel Maria Contreras 133, Mexico City 5, Mexico; Michael Drazen, Drazen & Associates, 120 North Gay Avenue, St. Louis 5, Mo.; Miss Josephine M. Gould, 1306 Brush Hill Road, Milton 86, Mass.; Cecil H. Green, Geophysical Service Inc., P.O. Box 35084, Air Lawn Station, Dallas 35, Texas; Lawrence T. Haugen, P.O. Box 705, Annapolis, Md.; Anton W. Hosig, 67 Lawrence Park Crescent, Bronxville, N.Y.; Miss Myrna S. Howe, 2293 North Holliston Avenue, Altadena, Calif.; Richard H. Longmaid, 527 Avondale Ave., Los Angeles 48, Calif.; George H. Nichols, R.F.D. #1, Earlysville, Va.; Angelos A. Spilios, Essex Sanatorium, Middleton, Mass.; Andrew E. Vaughan, Jr., Box 71, Pineola, N.C.; Philip H. Vivian, Box 1464, Cocoa, Fla.; John W. Voelcker, City & Guilds of London Institute, 76 Portland Place, London 1, England; Rear Admiral Charles D. Wheelock, 8355 Pasco del O Caso, La Jolla, Calif.; Gerald L. White, 1454 Mountain Street, Montreal 1, P.Q., Canada. — HERBERT L. HAYDEN, *Secretary*, E. I. du Pont de Nemours & Company, Leominster, Mass.; ALBERT S. REDWAY, *Assistant Secretary*, 47 Deepwood Drive, Hamden 17, Conn.

'24

It was a grand reunion. For the better part of three days about 80 of us, most with our wives and a sprinkling of progeny, foregathered on Cape Cod. The Oyster Harbors Club turned out to be a wonderful spot. The foul weather held off long enough to let the golfers try out the sand traps and return, glowing with health, to join their sedentary fellows in the tap room. When the rains came, of course, they were relieved of the necessity of this prelude.

We overflowed the club proper, so some were quartered in cottages, and long into the night reunions within reunions went on there. Some of us came quite a distance to renew old acquaintances. Nish and Luisa Cornish with their charming daughter, Vicky, came up from Mexico City. Nish, in gaudy Mexican jacket, handed out all manner of souvenirs, along with advertising cards plugging next year's Fiesta. It's the 50th anniversary of the M.I.T. Club so it should be a humdinger. The Amezagas were up from Havana, not overly happy with recent events down there. They say that Tony Rosado doesn't even go to the office any more, since the Castro government sent in an "interventor" who is now running the telephone company. From Puerto Rico came Professor Calor Mota, en route to Spain. The Ferrés didn't make it, but Al Roig was there. Al is more of a Floridian than a Puerto Rican now. He had sent up a five-pound bag of sugar for everyone there. Product of one of his own companies, of course.

Which brings to mind the subject of loot. Every family got a memento of the occasion from the Class, a handy little brandy sniffer, 100-ounce size, suitably embellished in gold. Just in case anyone didn't want to sniff brandy, there was a lip on it and a glass stirring rod went along with it. And, as someone said, if you don't want to stir martinis, you can float roses in the thing." The distribution of the raft of prizes, many of which were really worthwhile, occupied most of Saturday evening. Saved until the last was a gorgeous electric range that Walter Weeks had pried out of General Electric. Ed Moll won that one.

Friday evening we had a magic lantern show, movies and slides from past reunions and all sorts of things. This and Saturday's banquet were the only planned activities, unless you can call the front lawn rocketry planned. Having announced this was to be a space age reunion, Chairman Cardinal came equipped with every kind of rocket toy he could turn up, some of them very ingenious. He and Clint Conway, in space helmets, officiated, although at one point they had to call on expert missileman General Zartarian to make one rocket go. Wonder what his company commanders would have thought if they could have seen him on his hands and knees fooling with a plastic rocket and a garden hose? You may be sure Sark was more surprised than anyone when he got the thing to work!

The Gib Cowans didn't get any prize for the largest family contingent, five in toto, but those three kids did all right in the loot raffle Saturday. And of course they would win things like a bottle of Pret Littlefield's spiritous product, a box of Mike Amezaga's Havana cigars, and other things that were immediately turned over to Gib. He must have made expenses on the trip from Sault Ste. Marie. Sox Kinsey was to fly up Saturday in his company plane, but when the weather closed in he held his own reunion in New York.

One notable thing about this reunion was the number of men who showed up for the first time at such an affair. There are no records to check back on, but your secretary can't remember that Earle Bates, Eric Brater, Austin Cooley, Si Kirshen, Paul Miller, Carl Muckenhoupt, Neil Olken, Hap Stern, Hunt Wardwell or Sark Zartarian had ever attended one before. We bet it won't be their last. It was a first for Tom Coogan, too, but he has a palatial summer home right next to the club so it wasn't much of a trip for him.

Pret Littlefield had appointed a nominating committee which met regularly and often in executive session in the bar. They came up with their slate on Saturday night and your class officers for the next five years were elected by acclaim, boisterous acclaim. Here they are: President, Blay Atherton; Senior Vice-president and New York Representative, Paul Cardinal; Eastern Vice-president, Earle Bates; Western Vice-president, Max Ilfeld; Midwestern Vice-president, Dave Meeker; Vice-president at large, Al Roig; Treasurer, Ray Lehrer; Secretary, Chick Kane. No one bothered to explain just what that "Vice-president at large" means but Roig at large, and now officially, gives pause.

We had a pair of guests, Lobby and Conchita. Lobby was a guest at our fifth reunion and he hasn't missed one since. The fact that we finally saw the light and made our gatherings coeducational undoubtedly influenced conformist Lobdell in his decision to enter the holy state of matrimony.

Most of us left on Sunday, but for a good many that meant heading for Cambridge and the big affair on Monday, a combination of Dr. Stratton's inauguration

and Alumni Day. By the way, to answer a common query: President Julius A. Stratton is not the son of President Samuel Stratton of our (and his) day. Sam was a bachelor. They're no relation. Rain played a dirty trick again (remember June?) and all the spectacular outdoor activities were curtailed and brought indoors. However, we had a thoroughly enjoyable time, the 35 of us who were there with our wives, right through Arthur Fiedler's Pops concert in the auditorium.

This is the briefest of brief reports on a most enjoyable occasion. However, those who were there do not need a detailing, and those who were not could not possibly get the spirit, the warmth, and friendliness that goes with an affair of this sort by a factual recounting. Let's just say that each succeeding reunion seems better than the one before. Maybe we're getting mellower. In any event, the next will be our 40th — 1964! Seems like a long way from here, doesn't it? It isn't. See you there. — HENRY B. KANE, *Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

'25

The final event of the last Alumni year, the inauguration of Dr. Stratton on Alumni Day, was well attended by members of the Class of 1925. The following were present at one or all of the events on June 15: Mr. and Mrs. Henry G. Bacon; Professor and Mrs. Samuel H. Caldwell; Charles M. Cooper; Fred J. Duncan; Mr. and Mrs. F. Leroy Foster; Mr. and Mrs. David Goldman with their daughter and her fiancé; Mr. and Mrs. Fred Greer; Mr. Thomas J. Killian; Mr. and Mrs. Robert Hodson; Mr. and Mrs. Max Levine; Mr. and Mrs. Henry F. McKenna; Mr. Edward McLaughlin; and Mr. and Mrs. Avery H. Stanton.

The first Alumni event of the new season took place on September 11 and 12 at Cambridge when five members of the Class were present at the Third Alumni Officers' Conference. Those present were Chink Drew, Fred Greer, Ed Kussmaul, Weih Weihmiller and Doc Foster.

Some of the members of the Class are becoming much better correspondents and news from classmates via this route is greatly appreciated. A letter from Bob Ashworth indicates that he is on a trip to Europe expecting to return about the middle of October. Al Sherman, who is located in Cuba, indicates that in the past three years, with the revolution on that island, he has been scrambling about. He has been carrying on consulting work in mining engineering and geology, and at the same time has been operating a small pyrolusite property. It appears that there is plenty of room for improvement in the economic conditions of the island.

Myron Doucette reports on his meeting with Colonel George Oetinger while on active duty last spring at the New York Ordnance District. George is assistant commanding officer of the group. Both George and Myron had their basic training at the Aberdeen Proving Ground with Ray Lucey, whom neither had seen since graduation. Meanwhile, a letter from Ray brought the information that he had retired in March, 1959, and was in the process of moving to Florida. He plans to spend about six months to a year deciding where in Florida he wants to live permanently. Some of our classmates in that state may run into Ray during the next few months. If any of you want to reach him, he should be addressed at 49 Boulevard Knolls, Poughkeepsie, N.Y.

George F. Mahoney, who for the past several years has been city engineer and superintendent of buildings in Torrington, Conn., has been suggested to the governor of the state for the filling of the position of state highway commissioner. An article in the Hartford, Conn., *Courant*, several months ago, said some very nice things about George. We hope he has received this post, though no news of it has yet reached Cambridge.

King E. Gould, who received his M.S. in Electrical Engineering with the Class of 1925 and later obtained his Sc.D. in E.E. at the Institute, is director of station development with the Bell Telephone Laboratories. In the *Bell Laboratories Record*, August, 1959, he presents an article titled "The Fine Art of Measurement." Those of you who have access to this publication may be interested to read the article.

M.I.T.'s bi-weekly publication, *Tech Talk*, recently gave Sam Caldwell a fine write-up indicating that he has invented a Chinese typesetting machine that promises to solve a long-standing problem in Chinese printing. Seven years have gone into the development of this machine, more accurately described as a photocomposition machine, since it produces a photographic film instead of the usual metal type. It has been named "sinotype."

As a final item, you will by now have received the first Alumni Fund mailing and the first official announcement concerning the 35th reunion scheduled for June, 1960. Each of these calls for a response. Please take action promptly. — F. L. FOSTER, *Secretary*, Room 5-105, M.I.T.

'26

The July issue of the notes was written from La Jolla, Calif., and we will pick up from there in a moment. We cannot refrain, however, from first telling you that this issue is being started in a dormitory room at M.I.T. Your secretary is attending the third Alumni Officers' Conference and it being a two-day affair, the Association put us up at Baker House. As usual, I'm up before breakfast and it seemed like a good opportunity to get going. It's a beautiful fall morning here in Cambridge — especially looking out over the river with the low morning sun hitting the buildings across in Back Bay. But let's pick up where we left that last issue.

After a weekend at La Jolla we returned to Los Angeles for a few days and while there I phoned Dan Bloomberg at Republic Productions in North Hollywood. Although our schedule was tight Dan insisted that we drop out for a quick trip through the studio and a visit to his home. The studio visit was most interesting — especially since we had never visited a movie studio. Dan is vice-president of the company and chief engineer, which seems to make him responsible for about everything except the acting. It's amazing to see the equipment, sets and miscellany required for this business. Warehouses filled with everything from barber poles to automobiles. I have Kodachromes taken all over the place — except in the actual studio where we witnessed one of Jack Webb's TV productions under way. I had to give up my camera upon entering — I guess you can't blame Mr. Webb for wanting to be the first to show the picture he's paying to produce. It was amazing to see the electronic equipment used in a modern studio — behind the scenes. It was all most impressive and throughout you could see Dan's fine hand in the orderly, smooth operation. Dan's home, just seven miles from the studio in Encino, also showed his careful thought and good taste. Beautifully located on a hill overlooking the valley, the house, modern but not modernistic, fitted the landscape perfectly and had every requisite for good living including a large swimming pool, which while decorative, is used daily! Dan appears to have deserted the East completely and we must admit that his setup is most appealing.

During the summer a few classmates dropped in at Pigeon Cove. (Incidentally, I'm back at P. C. after the conference and the rest of the notes will be from here.) One evening in late July a Thunderbird came rolling up the drive — it was Bob Dawes with his wife and we had a pleasant visit. Bob was honored at the Alumni Officers' Conference with a 1959 Bronze Beaver Award for his success in guiding the activities of the M.I.T. Club of Central Massachusetts. Bob has long been a loyal and active Alumnus and the Class is proud and pleased at this recognition of one of our outstanding members. Another visitor to Pigeon Cove was Eliot Bidwell who dropped by during a weekend visit to Gloucester. I was dropping my Star boat in the water for a Saturday afternoon race. Eliot heads the Bidwell Hardware Company in Hartford, a long established institution in Connecticut. Our third visitor was none other than Jim Killian. Jim and Mrs. Killian also dropped by on a Saturday afternoon, but this time I was in the middle of a race (or rather at the tag end) and did not return until they had left. Jim has asked that we include in the class notes a statement of thanks for the surprise presentation of the silver service at the Alumni banquet in June. To quote Jim, "I would like to express the delight and appreciation that Mrs. Killian and I feel for the very wonderful thing the Class did." In case you did not see the writeup, refer to page 485 of the July Technology Review which says, "Dr. and Mrs. Killian were escorted to the platform by I. Austin Kelly, 3rd, and David A. Shepard, and the presentation was made by Mr. Kelly." On this same page there is a marvelous photo of Dave, escorting Jim and Mrs. Killian and Jim has the tray in one hand. You will note reference above to the "silver service." The silver tray has the engraved signatures of 325 classmates but the presentation by the Class included an entire silver service. Jim Offutt wrote during the summer about attending the presentation of the Washington Award to Jim Killian. This is "an honor conferred upon an engineer by fellow engineers for accomplishments which pre-eminently promote the happiness, comfort, and well-being of humanity." The first award went to Herbert Hoover in 1919 and over the years such names appear as Orville Wright, Michael Pupin, Charles F. Kettering, Henry Ford, Karl Taylor Compton, and Vannevar Bush. The Class once again can bask in the reflected glory of our distinguished classmate.

I must now dash over to the Yacht Club and remove the mast from the "Flying Cloud" because our racing season is over and it's time to put our boats away for another winter. So with the finish of one season's activities, we begin another. By the time this issue reaches you the frost will be on the pumpkin and we will be preparing for Thanksgiving; May you have a pleasant one! — GEORGE W. SMITH, *Secretary*, E. I. du Pont de Nemours & Company, Room 325, 140 Federal Street, Boston 10, Mass.

'27

There is a reasonable amount of class news in the mail bag after the summer. Here are those who attended the Alumni banquet on June 15: Mr. and Mrs. Dwight C. Arnold, Mr. and Mrs. Robert M. Bige-

low, Edward Chase, Elwood A. Church, Arthur J. Connell, Mr. and Mrs. Harold E. Edgerton, Mr. and Mrs. John D. Eldert, Mr. and Mrs. Richard P. Hawkins, Hector A. Moineau, Miss Sara A. Scudder, Mr. and Mrs. Donald H. Spitzli, Mr. and Mrs. Ezra F. Stevens, Mr. and Mrs. William L. Taggart, Jr., Mr. and Mrs. Robert Wise and Mr. and Mrs. Clarence L. A. Wynd. That same day, D. C. Arnold and C. L. A. Wynd represented the Corporation, and W. L. Taggart, Jr., was a member of the committee on arrangements for the inauguration of President Stratton.

An interesting article appeared in the May 31 issue of the *New York Times* advising that Edward D. Stone is the designer of the Gallery of Modern Art, a 10-story building, commissioned by Huntington Hartford. Occupying the irregularly shaped block between Columbus Circle and 58th Street, and Broadway and Eighth Avenue, it will stand alone. It will have a sheath of white marble, with window perforations, and larger openings near the top. Work on the gallery was to start late this summer, and it is to open next year.

Sydney Berman, one of the nation's leading experts on aeronautical engineering and the causes of air crashes, was awarded the Air Force's Meritorious Service Award by Major General Joseph D. Caldara, director of flight safety research for the Air Force, for his discovery of a structural fault in the B-47 jet bomber which had caused three to disintegrate in midair, and could have cost many more lives had it not been discovered. At a three-day national convention on military electronics held in Washington recently, the technical sessions included the presentation of a paper by D. G. C. Luck entitled "Space Guidance and Tracking." Dr. Luck is with the Advanced Research Projects Agency.

The Alumni Association has elected W. L. Taggart, Jr., as vice-president for two years, and Bill is also in charge of the committee on mid-winter programs. Dike Arnold is in charge of the Alumni Association Audit and Budget Committee. S. S. Auchincloss, President of Tracerlab, Inc., has offered to provide American radio manufacturers with license rights to the "Banshee" Fallout Alarm on a no-cost basis. The Banshee is a compact device which can be incorporated in any home radio to provide an audible warning of the presence of harmful amounts of radiation. Barney Silveston checked in a few weeks ago. He is with Tippetts-Abbett-McCarthy-Stratton, engineers and architects, in New York City.

We regret to hear of the death of James P. F. Pilkington on August 1. He was a prominent member of our Class during the undergraduate years. After graduation he joined the Travelers Insurance Company in the building department, and was appointed office supervisor in 1938. In 1946 he was promoted to the position of secretary of personnel and, a year later, was named to Hartford's first civic personnel board. He lived in West Hartford and leaves his wife and a son.

We have also received word of the death of Hiram Benami in 1958. He was living in Israel. — J. S. HARRIS, *Secretary,* Shell Oil Company, 50 West 50th Street, New York 20, N.Y.

'28

To three 1928 fathers, last June brought the traditionally appropriate sound of wedding bells!

George Chatfield's son, the Rev. Donald Franklin Chatfield, was married on Saturday, June 13, to Martha Jane Daily in the Larchmont Avenue Church, Larchmont, N. Y., where, on the preceding Wednesday evening he had been ordained a Presbyterian minister following his graduation from Princeton Theological Seminary. Don graduated from Yale in 1956, where he was a member of the Yale University Dramatic Association and the fencing team. At Theological School he was vice-president of his class. Pat whose parents are the Rev. and Mrs. Maurice C. Daily of Avenida Francia, Ciudad Trujillo, Dominican Republic, graduated in June from Emory and Henry College where she was a member of the Cardinal Key, a national honorary society. Susan Chatfield, having just completed her sophomore year at Wilson College, was the maid of honor. The reception was held at George and Marie's home in Harrison where the continuing rains prevented the guests from enjoying the lovely garden, but dampened not the least the hospitality of the host and hostess. To Don and Pat, who will be living in Chicago, go 1928's good wishes.

Jack Chamberlain's daughter, Jeanne Bowker Chamberlain, chose June 27 as her wedding date. In the Payson Park Congregational Church in Belmont, Mass., she was married to George Graham Watson, Jr. Dr. Jack and his wife, Dorothea, entertained the guests subsequently in the church parlor. Jeanne has completed the Mt. Holyoke College-Hartford Hospital nursing program and is now associated with the Children's Hospital in Boston. George graduated from Amherst College, and the Harvard University Graduate School of Education. He has taught at Governor Dummer Academy, served two years in the Army, and is at present in the social science department at Winchester (Mass.) High School. Jeanne and George will make their home in Winchester. 1928 sends good wishes to the young couple!

Tom Larson's daughter, Linda Lee Larson, was married June 20 to Douglas M. Behrendt. The honeymoon trip was a European tour. Linda and Doug will live in Boston next year where Doug will attend Harvard Medical School. Linda will go to Katherine Gibbs School for a special one-year course after completing her two years at Lasell Junior College. On behalf of the Class we give our very best wishes to Linda and Doug, and we wish them every success in the ambitious program they have planned.

Tom informs us also that his son Bob received his master's degree in industrial management from the Institute last June. He is now working for the Standard Oil Company in New Jersey and is living in Elizabeth. After October 1, Tom will be at the New York office of his company, Carbic-Hoechst Corporation, and he and wife Lillian will be living in Summit, N. J.

Jim Donovan, who gets a large part of our news in his correspondence, reports that Walter Mattlage is now general manager of the fabrics finishing department of E. I. duPont de Nemours and Company in Wilmington, Del. By every indication Matt has scheduled a particularly busy year for himself.

A note to the Ralph Jopes contains the information that George Bernat has retired temporarily. George and Ruth have moved from West Newton, Mass., and are now living in Sarasota, Fla.

The *New-Tribune* (Waltham, Mass.) for July 31, 1959, carried the story of the 25th anniversary of Jim Donovan's company, Artisan Metal Products, Inc., of Waltham. The event was celebrated by a party held at the company's plant. From a modest beginning the company has grown to substantial size largely through Jim's faith and hard work. It is a tribute to Jim's good management policies that many of the old employees are still with the firm and serving faithfully. Ralph Jope has been associated with Jim from the earliest days of the enterprise and is presently clerk of the corporation. Gentlemen, our congratulations on your achievement and sincere wishes for continuing success! — RALPH T. JOPE, *President,* Room 1-276, M.I.T., Cambridge, Mass.; WALTER J. SMITH, *Assistant Secretary,* 15 Acorn Park, Cambridge, Mass.

'29

The reunion at Bald Peak early in June, in spite of the weatherman's selection of weather, was a howling success. I am sure I speak for all those who attended, in saying it was a very delightful weekend. The golfers, I am sure, did not have enough golf; the fishermen didn't catch the fish they had hoped to, but all in all it was a very congenial party.

The gang started to convene on Thursday night. Among the early arrivals: Mary and Frank Mead, Kay and Eric Bianchi, Dot and Ed Powley, and, of course, Joan and Wally Gale on the spot. Friday afternoon saw Evelyn and Brig Allen, Nina and Dick Conveney, Barbara and Al Eigenbrot, Clara and Ed Farmer, Ellen and Ken Horgan, Peryl and Bob Orrill, Mary Lou and Dave Peene, Carl Peterson, Dorothy and Wade Shorter, Helen and Tom Speller, Olive and Gordon Williams, Doris and Bill Baumrucker, Doris and Joe Green, Florence and Ted Malmstrom, Martha and Len Peskin and their son Henry, Norm Wickstrand, John Wilson, Martha and Earl Abbe, Margery and Fred Celler, Elaine and George McKenna, Dorothy and Herm Meissner, Olive and John Rich, Ollie and Elmer Skonberg and Ollie's sister, Mrs. Kackley, Murry Brimberg, Mary and Jerry Gardner, Fran and Paul Donahue, Lee and Iz Winer, Ollie and Tacks Crosby, Elinor and Bill Saunders, Sam Shaffer, Dot and Sears Hallett, Lucille and Charley Denny, Sally and Gordon Bowie, Christine and Russ Shannon, Elise and Warren Walker and their four children, Deborah, Pamela, Roberta, and Eben, Helen and Hugh Hamilton, Marjorie and Jim Magenis, Bill Aldrich and his five children, Jimmy, Johnny, Gregory, Mary Gale, and Jean Anne, Marie and Jim Fahey, John McCaskey, Paul Gill, Dan O'Connell, Jack Hallahan, Peg and Yours Truly. At the last minute several found it impossible to attend: Caroline and Carl Harris, D. A. Wilson (Mrs. John), Ellie and Sol Horwitz, Ed Yates, and Molly and Jack Osborn. Ken Gold and his sister dropped in for a visit on Saturday, and Luella and Mark Libby came over from Berwick, Maine, on Sunday.

We fell just short of the 100-odd people predicted in the last issue of The Review. (Please don't take offense at the colloquial use of "odd.") Special mention is due for the long trips that some of the boys and gals took: Mary Lou and Dave Peene from Coral Gables, Fla., Peryl and Bob Orrill from Chicago; Evelyn and Brig Allen from Detroit; Lucile and Charley Denny from Middletown, Ohio; Ollie and Elmer Skonberg from Louisville, Ky.; Sam Shaffer from Los Angeles; Elaine and George McKenna from Toledo, Ohio; and John McCaskey from St. Joseph, Mo. I am sure they all found it worth the trip.

The highlights of the weekend were Joan and Wally's cocktail party Saturday afternoon which unfortunately had to be held indoors rather than on the terrace of their home but nevertheless was enjoyed by all. The banquet on Saturday evening was M.C.'d by the inimitable Brig Allen. He carried out his duties in fine style. John Wilson brought us up to date on the activ-

ities and plans of the Institute, and prizes were awarded for those activities which could be carried on in the rain. Jim Fahey won the golf prize for men, and Evelyn Allen and Dot Hallett took the girls' prizes for golf. Both Frank Mead and Yours Truly were presented sterling salt and pepper shakers for our work as chairman of the reunion committee and class notes secretary for The Review, respectively. Both Frank and I greatly appreciated the gifts and the thoughts behind them.

Following the banquet everyone retired to the main ballroom for drinks and dancing. Somewhere in the course of the evening two strange characters appeared, reminiscent of the 'Twenties. They turned out to be Fran Donahue, replete with bangles and beads and a cloche hat, and a dress I am sure she acquired back in the early 'Twenties. With her was Jim Fahey attired in knickers, raccoon coat, and derby. Also reminiscent of the 'Twenties was their Charleston which neither one had forgotten in the least. They were really spectacular and received a big hand for their appropriate efforts. During and after the dance, a buffet supper was served in the bar-lounge. We quit about two o'clock, but I understand festivities went on until well after four.

Since the Winnipesaukee boat trip was called off by the captain due to the rain and very rough water on the lake, the afternoon turned out to be ideal for loafing, and many took advantage of this to catch up on their sleep. After dinner the gang gathered again in the ball room for a quiet, peaceful evening and were treated to music by a local organist and accordionist and were regaled by young Jimmy Aldrich with his songs.

Those remaining at the reunion on Sunday, left on Monday morning, many of whom attended the inauguration ceremonies and Alumni Day activities at Cambridge. All in all it was a very fine, enjoyable, and congenial weekend.

Such a lovely place is Bald Peak that many of us who are here locally plan another weekend at Melvin Village on October 3. We are hoping for better weather, and at that time of the year, we are almost sure to have it. To those of you who had hoped to come and couldn't, we are sincerely sorry that you could not make it. To Frank Mead and Wally Gale, who bore the brunt of the organization and running of the reunion, go our thanks for a job extremely well done under most adverse conditions. There has been some talk about reuning more frequently than five years. Those of us who attended are all for it. Let's have your thought. — FISHER HILLS, *Assistant Secretary*, 62 Whittemore Avenue, Cambridge 40, Mass.

'31

Hope you all had a pleasant summer. Your Class was well represented on Alumni Day with 18 members, including Mr. and Mrs. Larry Barnard, Dr. and Mrs. Gordon Brown, Mr. and Mrs. Ralph Davis, Mr. and Mrs. Harold Gurney, Mr. and Mrs. Ed Hubbard, Mr. and Mrs. Helge Holst, Mr. and Mrs. Bill Jacobs, Mr. and Mrs. Claude Machen, Mr. and Mrs. Al Pierce, Charley Rankin, Mr. and Mrs. Howard Richardson, Mr. Denis Robinson, Mr. and Mrs. Gil Roddy, Mr. Don Sinclair, Mr. and Mrs. John Swanton, Mr. Hugh Wertz, Mr. Harold Wilson, and Yours Truly.

Gordon Brown has made the news again by his promotion to Dean of Engineering. In addition, the American Institute of Electrical Engineers has announced that Gordon will receive its 1959 Medal in Electrical Engineering Education. (We are still trying to find out what he is going to do with the $500 that goes with the award.) John Dodson, of Montpelier, Vt., has been appointed resident engineer on the construction site of the Barre sewage disposal plant. A note from Fred Elser tells of his retirement from the regular Army Signal Corps as Colonel on May 31, after 28 years commissioned service. His new address is 13950 Sherman Way, Van Nuys, Calif. He now has a job with Packard-Bell Electronics at their new plant. Fred says his daughter Janet is leaving her library job in Buffalo to join him in California; his other daughter, Margy, and her husband are teaching school in Pittsburgh; and his son, Fred, Jr., starts at the University of Georgia this fall.

Word from The Technology Review office mentions that one of the 12 basic papers presented during the Symposium of Basic Research at the Rockefeller Institute in New York, May 14 to 16, 1959, was authored by Dr. James Fisk. His subject was "Basic Research in Industrial Laboratories."

Class prexy Howie Richardson tells us that he is about to change jobs — after 26 years with Sylvania Electronic Products, Inc. — to become Executive Vice-president of the Stanley Works in New Britain, Conn.

A thoughtful note from Mrs. Robert Sanderson, sister-in-law of George Sanderson (whose death was announced in these columns recently), gives us the following information: "George was feature editor of *Progressive Architecture* and had been on the staff since 1944. After Groton, Yale, and M.I.T., he found that 1930 was a bad time to get anyone to build anything and so got a job with *Newsweek* — then worked on *Sweet's Catalog, Architectural Record,* and as building editor of *Sunset*. George never married and was a favorite uncle to Mrs. Sanderson's four children."

While swimming in Westport last August, I ran into Albert Yohn. He is living in Silvermine, Conn., and works in Norwalk.

This summer was an enjoyable one for us. I drove Louise and my daughter, Bobbie, across the country, visiting many of the well-known places of interest. They stayed in Ross, Calif., for the summer, making side visits to Yosemite, Santa Barbara, and Carmel, returning to Connecticut just in time for school. — EDWIN S. WORDEN, *Secretary*, 9 Murvon Court, Westport, Conn.

'32

Carroll L. Wilson, XV, is back at the place of his first employment, M.I.T., as Visiting Professor of Industrial Management. Carroll, who has been a governmental executive and general manager of the U.S. Atomic Energy Commission, and industrial executive with Climax Molybdenum and the Metals and Controls Corporation, will be lecturing on "Governmental Policy and Business Decision." He returned last month from a challenging trip to Africa for the Council on Foreign Relations in New York. His itinerary included Ghana, Nigeria, Belgian Congo, Angola, Rhodesia, Kenya, Uganda, and the Sudan. The purpose of this trip was to learn more about this area, to learn what the policy of the United States should be in relation to the political and administrative institutions which these countries have. Regional plans for the development of power and roads, as well as the establishment of commodity prices were included in the survey. I saw Carroll the other day and he said he had a most fascinating summer studying many of these newly independent countries.

Three of our Course XVII classmates have been doing extremely well in the Army. Brigadier General Louis T. Heath is now commanding general, Field Command, Defense Atomic Support Agency with headquarters at the Sandia Base, Albuquerque, N. M. Brigadier General Clarence Renshaw has recently been appointed assistant chief of the Corps of Engineers for Military Construction and is in the office of the chief of engineers in Washington. Colonel James E. Harper, Jr., has been made chief of the logistics division in the General Staff Headquarters of the Defense Atomic Support Agency. He is in charge of construction and environmental criteria for operational and storage sites for atomic weapons. Jim was here for Alumni Day with his wife, who was a former major in the Army Nurse Corps. Jim was a bachelor for a long time but the long cold winters of Alaska finally made him succumb a couple of years ago.

Others who were present at the Alumni banquet last June were: Frank Chaplin, XVI; Francis T. Gowen, IX-B, and wife; Miss Katherine A. Lyons, VII; Robert E. Minot, IV, and wife; Ed Nealand, V, and wife; Al Dunning, II; Bill Pearce, VI-A; Fred Powers, VIII; and Al Stewart, XV, and his wife. As we get closer to our 30th reunion, I hope that more of us will show up at these annual affairs to build up the class spirit for a good reunion.

Bill Kirkpatrick, X, has recently formed a new firm, the Kalamazoo Paper Box Corporation, by amalgamating two box companies. He is now making set-up boxes and folding boxes for anyone who wants to buy from 1,000 to 100,000 of these. Bill is president and treasurer, as well as general manager.

Iron Age, in its July 16 issue, carried a picture of Richard M. Stewart, XVII, beside his shiney old 1911 Peerless. Dick is president of the American Brass Company and has for his ambition "to bring back the good old days for copper and brass mill products." He drives his Peerless to work with its 350 pounds of copper and brass as opposed to a modern car with only 50 pounds. The article commends Dick for the modern approach he has brought to the management of this century-old company.

F. Carlyle Roberts, Jr., XI, is now training officer in the education and training branch of the division of international health of the U.S. Public Health Service in Washington. Jim Robson, II, told me about a recent trip to Switzerland with his family. His older daughter, Mary, has just enrolled as a freshman at Middlebury College in Vermont. Dub Rash, X, the new regional vice-president of the Carling Brewing Company in St. Louis, has issued an invitation in a letter to me for all of our classmates to drop off in St. Louis for a glass of fine beer. His daughter spent a summer in England as a member of the Experiment in International Living. His 17-year-old son worked in a local foundry and Dub stated that he became convinced that higher education is a wonderful thing if it will keep him from having to work so hard. M.I.T. would be a cinch, I think, after that! — ROLF ELIASSEN, *Secretary*, M.I.T., Room 1-138.

'33

A whole basketful of notes came during the summer, plus some very pleasant personal visits. Both are appreciated. Garb Garbarino, X, came for the Alumni Officers' Conference in September, looking young, healthy, and as interested as ever

in M.I.T. affairs. George Stoll, IX-B, keeper of the class treasury, was taking nourishment of both kinds at a late summer wedding; George was *hors de combat* at the time of our 25th, but has finally stabilized his internal problems and looks as good as new.

On the move, and with the best wishes of the whole Class: Paul Genachte, VI, who has become a director of the Nuclear Science and Engineering Corporation in Pittsburgh; John Sterner, VIII, who is now vice-president of the Cordis Corporaion in Miami for the design, development, and production of cardiovascular instrumentation (just make sure you are not a candidate for some of John's gadgetry!); Herb Grier, VI, who directs the scientific and engineering activity of Edgerton('27), Germeshausen('31) and Grier, as executive vice-president.

Late last spring, Ed Gilliland, X, was the recipient of the American Chemical Society award in industrial and engineering chemistry and "is hailed by many as the outstanding chemical engineer in the country today." That's our Ed — a Professor at M.I.T. We note, too, with pleasure that Rod Chipp, VIII, and his wife (a full-fledged engineer in her own right) have been chosen by the National Society of Professional Engineers to tour South America next spring on a combined goodwill and fact-finding tour. They were chosen from 2000 engineers suggested for the assignment.

With deep regret and with sympathy to their families, we record the passing of Olav C. Mong, XVI, of Carlton Hills, N.J., in September 1956; of John O. Jenkins, V, of Garden Grove, Calif., on December 13, 1958; and of F. J. Cheek, Jr., I, of Lexington, Ky., on April 23, last.

Early in the summer, Mel Ehrlich, V, dropped in with his two sons, one interested in geophysics (University of Buffalo for the time being) and the other a senior in high school, headed for a career in music. Mel is vice-president and director of research for American Lubricants in Buffalo. A note from Walt Swanton, X, reports that his older daughter, Susan, entered Radcliffe this fall. And a welcome note from long-lost F. T. (Ted) Leahy, Jr., XV, who resides in Adelphi, Md. Ted is with the National Security Agency (which tells all the story Ted can tell about his work) and admits to the hobby of bridge playing. Ted is a bachelor, which has nothing to do with the N.S.A. nor bridge. We had a delightful note from Bill Pleasants, I, who has a "new job with RCA in Moorestown, N.J., as manager of construction and emplacement of the Ballistic Missile Early Warning System (BMEWS). This is a billion dollar project for the Air Force, involving high power radar stations in the Arctic. Have made three trips to the Arctic, one of which was a flight across the top from northern Greenland to Northern Alaska. Flew 20,000 miles last year and may top that figure this year. My oldest daughter has completed two years of college and is getting married next month. She will work for Burroughs in Paoli, while her husband finishes college. My second daughter has another year of high school." Stop in when you get to Boston. — R. M. KIMBALL, *Secretary*, Room 3-234, M.I.T., Cambridge 39, Mass.

'34

Reunion highlights: 120 classmates, 86 wives and 87 sons and daughters attended our 25th reunion June 12–15. We were housed in Baker House on the campus and just about filled it. It was a cold, rainy weekend, but the class spirit was not measurably dampened. Some of the sons' and daughters' activities had to be moved inside and there were no cases of sunburn.

Friday evening, 264 people had an excellent get-together buffet supper in Baker House. Saturday noon, the Institute provided a luncheon attended by 195 classmates and wives and 58 members of the Faculty (and their wives) who were on the staff when we were students. Dr. and Mrs. Stratton attended and Dr. Stratton gave a warm greeting to our Class. The luncheon was made most festive by Hank Backenstoss' gift of many cases of a choice champagne.

Saturday afternoon, Larry Stein organized a crew "race" and the '34 all stars had a ball. The class banquet at the Faculty Club Saturday evening was attended by 206 classmates, wives and guests. Dr. and Mrs. Killian attended, and Dr. Killian gave a most heartening talk on his recent Washington appointment as Special Advisor to President Eisenhower for Science and Technology. Dancing and socializing followed until quite late, but not as late as at previous reunions. The senior group of sons and daughters had their own record hop complete with a disk jockey and a few imported stags to even the gang.

Sunday, there were 236 attending a wind-and-rain swept, slowed-down clambake on Briggs Field. Many took the food into Baker House to wallow in comfort and the hardy ones ate under a slightly leaky tent. We had a late strawberry and peach shortcake supper. The Institute gave us all our breakfasts and provided Baker House, complete with ample student help.

The class meeting was held on Sunday afternoon and the following officers elected: President, Henry Backenstoss; Vice-presidents, Frank Milliken and Carl Wilson; Treasurer, W. L. Doten, Jr.; Secretaries, G. K. Crosby, J. P. Eder, M. S. Stevens, and H. Thayer. The officers were instructed to make arrangements for our 30th reunion, to be held on Cape Cod in June of 1964.

Members of the Class who stayed over for Alumni Day saw the impressive inauguration of Dr. Julius A. Stratton as M.I.T.'s 11th president. The evening Alumni banquet was attended by just over 100 of our classmates and their wives and the highlight for our Class was Hank Backenstoss' presentation to the Institute of our 25-year gift in the amount of $126,000. This is the largest amount ever given by a 25-year class and Hank, in behalf of our Class, received a tremendous ovation at the time of the presentation. The large number of men who made this gift possible should feel the satisfaction of a job well done. Those of us who are here at M.I.T. know how appreciative the entire administration is at the willingness of its Alumni to contribute to the Institute. An increasingly important part of the Institute's income is now contributed by Alumni and this is a significant factor in maintaining M.I.T.'s position of excellence in education and research. Our Class has, over the years, shown a gratifying willingness to give to M.I.T. and there is every hope that it will continue to do so. — MALCOLM S. STEVENS.

'37

Our Class was well represented at Alumni Day last June with even a greater number attending than in 1958. Each year we are having more members of our Class show an increasing interest in the affairs of M.I.T. This should build up to a grand 25th reunion. As you send in your letters and postcards, indicate your preference as to location and any other suggestions you may have. Remember our 25th will be an all family affair. Reservations have been made at the Oyster Harbors Club on Cape Cod, but some may prefer an "on campus" reunion. Definite details will have to be decided next fall, so your ideas and suggestions should be made this year.

Phil and Ruth Peters, Harvey and Robin Phipard, Bert and Lella Bennison, Joe and Mrs. Clark, Harry and Dorothy Stern, Wally and June Wojtczak, Maurice Bell, Joe Heal, John Nugent, Curt Powell, Len Seder, and Bob Thorson were among those attending Alumni Day in June. A few of the comments that were made will give those who missed attending an idea of the occasion: "It is really fun to be a part of these gatherings. We're counting on seeing all of you at our 25th reunion," Ruth Peters; "After a second honeymoon at Niagara, I've made my first M.I.T. Alumni meeting. This is living," Lella Bennison; "Everything is the same, wonderful," Walt Wojtczak; "My boat floats," John Nugent, (John's main interest is his boat, but an unknown party made the following comment about him, "Prediction — Will he be married by the 25th????"); "How about coming to Alumni Day next year, as a prelude to our 25th in 1962?" Phil Peters. Phil was chairman of the banquet and entertainment committee with Bob Thorson as one of his assistants. Phil was also one of the marshals of the Alumni in the ceremonial processional at the inauguration of President Stratton, which was an event long to be remembered.

Maurice Bell is the assistant dean of research in the Mineral Industries College of Penn State. We had a pleasant visit with Windy Johns while he was in Boston in June, at the Oil Heat Institute Convention. Windy is full of plans for our 25th reunion and is getting plenty of experience with his activities at conventions and also as chairman of the reunions of his fraternity. He is establishing outlets for his products overseas and is traveling back and forth to England and France.

Walter Regnery is with the Joanna Cotton Mills Company, Joanna, S.C., and has four children. Dick Lamphere is with the Oak Ridge National Laboratory, Oak Ridge, Tenn., and is married and has three children. George Levy is president of the brotherhood at Temple Mishkan Tetila in Newton. He is also vice-president of the Spaulding, Newton Parents Teachers Association and is active in Newton's Country Players. George is also active in the C.J.A. as chairman of the hardware team, and is trustee of 21 associations, plus being treasurer of the Madewell Company, Inc., and treasurer and manager of the Levy Hardware Company, Inc. The Levys, George and Barbara, with their two children, live at 808 Dedham Street, Newton Center, Newton, Mass. The Puffers, Joseph and Celia, with their three children, live at 9 Ravine Road, Winchester, Mass. The Blacks, Ross and Marie, with their two children, live at 1 Terrace Drive, East Northport, Long Island, N. Y. The Rands, Willard and Madeleine, with their one child, live at 202 Green Street, San Francisco, Calif.

Rolf Schneider is still associated with the foreign patent law firm of Langner, Parry, Card, and Langner at 10 Columbus Circle, in New York City. The Schneiders, Rolf and Erdine, with their two children, live at 70 Woodedge Road, Plandome, N.Y.

Al Woll has recently been reappointed to the Evansville, Ind., school board by the trustees of Center Knight and Perry Townships. Upon his graduation from M.I.T. in chemical engineering and business administration, Al attended Franklin

Union Institute in Boston, Columbia, and Northwestern Universities. He is a member of the educational council of M.I.T. and of the American Chemical Society. Al also is active in the Zionist Organization of America, B'nai B'rith, Anti-Defamation League, a member of Rotary, American Way, Vanderburgh County Society for Crippled Children and Adults, Evansville Society for Retarded Children. He is also a Shriner and holds a life membership in Ainad Temple, East St. Louis, Ill. The Wolls, Al and Pearl, with their three children, live in Evansville 14, Ind., P. O. Box #264, Station D.

Our list of those planning to attend our 25th reunion is growing and includes the following additions: Bill Austin, Ross Black, Nancy Klock, George Levy, Joe Puffer, Walter Regnery, Bill Rand, Jr., Rolf Schneider, Walt Wojtczak and Al Woll. — ROBERT H. THORSON, *Secretary*, 506 Riverside Avenue, Medford, Mass.; Curtis Powell, *Assistant Secretary*, Room 5-323, M.I.T., Cambridge, Mass.; Jerome Salny *Assistant Secretary*, Egbert Hill, Morristown, N.J.

'38

With an issue or two missed in the spring, I find some of my material getting a bit old. One such note from a few months back is a letter from Ed Faelten. He writes that he is "again elected as director of the Western New York Chapter of the New York State Association of Consulting Engineers, also continues as chairman of the committee on ethical practice, and also continues as a member of the state committee on ethical practice for the association. Since I take this ethics business rather seriously I suppose that I will continue these assignments for some years to come."

John Doremus, vice-president of Aircraft Radio Corporation, in a speech before the Institute of Radio Engineers, reported that his company had achieved a 10-to-1 improvement in the rate of catastrophic failures of mica capacitors in airborne radio equipment. Miss Margaret Seikel, professor and chairman of the department of chemistry at Wellesley College, has received a research grant of $10,800 from the National Science Foundation. The grant is to support a three-year program of research on flavanoid plant pigments, the compounds that make certain flowers yellow as well as occurring in other parts of plants.

Tom Bjorkman has joined the engineering department of Monsanto Chemical Company's Organic Chemicals Division at St. Louis. Tom was formerly with the Universal Oil Products Company in Des Plaines, Ill. The General Electric Company has established a district office in Washington, D. C., under the direction of Charles Small.

Before joining General Electric, Charles was manager of the Dayton area for the Electronics and Avionics Division of the Emerson Electric Company. Another note announces that Edgar Wayne Burnside has been named an engineering associate in Esso Research and Engineering Company.

I regret to report that Nathan Sanderson of Waltham, Mass., died September 13, 1958. — DAVID E. ACKER, *Secretary*, Arthur D. Little, Inc., 35 Acorn Park, Cambridge 40, Mass.

'39

Fred Grant wrote during June: "Bill Wingard told me he wired you news of your election to the office of 1939 secretary, but I suspect he hasn't said much else. Since I was delegated to care for registration and addresses it seems appropriate that I pass on such added news as came to me.

"The quinquennial class election was held in the Snow Inn beach house Saturday night, June 13. The slate of officers presented by the nominating committee (Bob Casselman, Aaron White, Ernie Kaswell, and me) was elected unanimously and loudly; besides yourself as secretary, the officers are Ernie Kaswell as treasurer, Oz Stewart as assistant secretary, and Bill Wingard as president.

"Oz Stewart reported as our class agent for the Alumni Fund — and was justifiably proud about it, too — that 46 percent of the active 1939 members had made contributions for this year. This is tops for any class between 1928 and 1959. Oz deserves plenty of credit for this job so well done.

"Bob Casselman put on a short show using old *Technique* photos, pictures from *Life*, reunion shots, and a Polaroid slide-making apparatus. The theme: "This is Your Life, Bill Wingard!" The results, projected on a screen and accompanied by Bob's very effective comments, brought down the house. Everyone who saw it will endorse a second round of applause and thanks to Bob for his hard work, imagination, and our fun.

"Enclosed is a list of registrants. Some couldn't come at the last minute: George Beesley is in the middle of a job change. Dave Frankel called to say, 'Have new baby — can't travel.' Abe Zimmer canceled to attend to his younger son who suffered a skull fracture caused by a golf club (the son is okay now). Ted Snow sent regrets from Dayton, Ohio, where he is with Boeing and said, 'We have a 15-year-old daughter and 12-year-old boy and are deeply involved in all the chauffeuring and participation required of parents in this day and age.'

"Those attending included: Dave Bartlett, Bill and Lucille Brewster, Bob and Dotie Casselman, Dick and Georgina Cella, Harold and Erma Chestnut, Irv and Olive Cohen, Wiley and Phyllis Corl, Joe and Jean Dana, Eli and Janis Danenberg, Bernard Elkin, Bascom Emerson, Warren and Lillian Evans, Lawrie and Alicia Fabens, Barry and Jean Graham, Fred and Virginia Grant, Roy and Marge Haworth, John and Lucille Herlihy, Ben and Anne Howes, Will and Jackie Jamison, Ernie and Yolande Kaswell, John Krey, George and Fontaine Laurent, Martin and Mary Lindenberg, Charles and Lois MacKinnon, Thurston and Nina Merriman, David and Alice Morgan, Manning and Constance Morrill, Harold Muckley, Joe and Betty Neuendorffer, Siegbert and Marcia Oettinger, Ernest and Bobbie Ohsol, Art and Caroline Olson, Bill and Viola Phillips, Gordon and Nancy Pope, Harold and Veronica Pope, Bill and Adrienne Pulver, Arthur and Marilyn Quint, Al and Maureen Rugo, Bob and Sybil Saunders, George and Mae Ann Senior, Seymour and Sylvia Sheinkopf, Sid and Jean Silber, Ed Skralskis, Jim and Phyllis Smith, Rodolfo and Faith Soria, Paul and Theodora Stanton, Herb and Mary-Louise Stewart, Oz and Lucille Stewart, John and Mildred Stiff, Bob and Aletta Touzalin, Wilbur and Erika Vincent, Aaron and Edith White, Bill and Anita Wingard, Howie and Anita Woodward, Bob and Kathy Wooster, Leonard and Dorothy Luchner, Charles and Fran MacArthur, Felix French, Gus and Prilla Hunicke, Myron Norman, Donald and Gloria Scully."

From this report you can see that Fred is still doing his usual super-excellent work. Incidentally, for those of our classmates who are "getting it made," Fred may be able to help because one of the things he does is advise on investments. Those interested can contact Fred at Box 186, Wellesley Hills 81.

Over the summer more news has developed: Joe and Jean Dana have written from Hudson, Ohio, to say, "It's a boy, our second, named James Shepardson Dana, who arrived July 5, 1959." Congratulations, Joe and Jean! Charlie Parker, who has been with American Bosch at Springfield, Mass., these 20 years wrote to say he is doing market analysis for the company and on the home front is challenging some of the leaders in our Class in a certain department. Charlie and his missus are expecting No. 4 during September.

Bob Touzalin who worked 19 years for one Cleveland Company has accepted the position of assistant chief engineer for Interlake Iron Corporation. I enjoyed a pleasant few hours with Bob at Cleveland just after Labor Day and saw him making valiant efforts to reduce the height of his "in-basket" in his handsome office on the 12th floor of a downtown office building. Paul Sandorff has been honored with an appointment to the Research Advisory Committee of the National Aeronautics and Space Administration.

From the *Boston Herald* of August 15: "James P. Hunsaker, 44, of 179 Dudley Lane, Milton, project director for A. D. Little Company, was killed Friday when a missile component exploded at the Tech-Weld Corporation. Hunsaker, a member of a famous engineering family, was graduated from Phillips Exeter Academy and attended Harvard before attending M.I.T. He married the former Frances Bowles Lowell of Beacon Hill, Boston, in 1942. They have three children. He also leaves a twin, Jerome, a Boston broker."

Robert B. Gordon has been appointed deputy director, fuels and materials, Atomics International Division, North American Aviation, Inc., Canoga Park, Calif. Bill Guy, assistant manager at Rocketdyne, also at Canoga Park, is getting an early start this year on the Alumni Fund Program. A. Lindsay Thomson has been elected president of the Terry Steam Turbine Company at Hartford, Conn. Lindsay, who has been with this company 20 years, was elected secretary in 1950, vice-president in 1956, and a director in 1957. Dave Kaufman has been awarded a Ph.D. degree from Harvard. George D. Hulst, of International Telephone and Telegraph laboratories, Nutley, N.J., delivered a paper describing an improved system of long-range microwave transmission at the Institute of Radio Engineers' convention in New York.

Your next reports will be coming from Oz Stewart, 31 Birch Road, Darien, Conn., because Oz was elected assistant secretary at the reunion and I'll be leaving the States for a while, having accepted an assignment from Vulcan-Cincinnati Corporation to be plant manager of a new urea synthesis plant about 100 miles from Seoul, Korea. The schedule is to arrive there about October 1, conduct personnel training for about two months, and then start and operate the synthesis plant, which is one of the two largest in the world. The Far East is not new to me because I have done business and traveled there for a number of years. I'm looking forward to this adventure and to making a contribution which will enable some of Korea's 30 million to eat and live better. — HAL SEYKOTA, *Secretary*, 416 Calle Mayor, Redondo Beach, Calif.

'40

The 20th reunion next June will be under the direction of Bob Bittenbender, who

did such a fine job on the last reunion. I understand that the reunion again will be held at Snow Inn. Further details will appear in subsequent columns.

Among the scientific research workers of World War II, few could be described as closer to the firing line than those who worked with beryllium, the wonder metal that frequently proved deadly to those who were exposed to it. And among those who were engaged in beryllium research was Frederick Kimball Loomis, a physicist who had worked for the electronics section of Time Inc.'s Springdale Laboratories since 1948. He passed away on April 30, 1959, as a result of beryllium poisoning. He was 40 years old. Surviving are his wife, two sons and a daughter. He resided in New Canaan, Conn.

Bill "Pinhead" Stone is now in partnership with Beano Goodman in the Madison Chemical Company in Madison, Ind. Bill takes care of the technical and inside work, while Beano is on the sales end. By the time these notes appear, they will have completed their new building designed by Edward J. Schickli'50. As all of us with advancing years, Billy has gained weight: to quote from Beano's letter: "Billy's weight has climbed from the 125 it was in school to 126, but his disposition has remained as wretched as always." Bill has two boys, aged 9 and 11, and according to Beano's report, they appear to be as tough and strong as their daddy.

From Sam Goldblith comes the news that Connie Schuerch, who is now at the State University College of Forestry, Syracuse, N.Y., has been awarded a John Simon Guggenheim Memorial Foundation Fellowship.

Also from Sam comes news that Clint Powell obtained his M.D. degree from Boston University Medical School in 1944 and then went into the U.S. Public Health Service. Clint then obtained his specialty boards in radiology, following post-graduate training in Philadelphia. Clint is now with the Research Grants Division of the National Institutes of Health in Bethesda, Md., and has supervision over the surgery and radiation grant program.

A speech of Schrade Radtke before a joint session of the American Zinc Institute and Lead Industries Association on April 23, was quoted at great length in the May 11, 1959, issue of *Chemical and Engineering News*.

James Moore, who is vice-president and general manager of NRC Equipment Corporation, has been elected to the Board of Directors of National Research Corporation.

Dave Morganthaler, who is president of Foundry Services, Inc., of Columbus, Ohio, has been elected to membership in the Young Presidents Organization.

Florence Riffe Williams and Francis Yerks were wed on May 16, at the Church of the Good Shepherd in Jacksonville, Fla.

Those attending Alumni Day ceremonies last year were: Mr. and Mrs. James L. Baird, Alfred P. Barton, John L. Danforth, Mr. and Mrs. J. B. Feldman, Dr. and Mrs. Samuel A. Goldblith, John R. Gray, Alvin Guttag, Mr. and Mrs. Russell L. Haden, Mr. and Mrs. Andrew F. Kay, Jacques R. Laurence, Frederick J. Port, Mr. and Mrs. Philip A. Stoddard, Mr. and Mrs. M. Arnold Wight, Jr., John Kapinos, Marshall Bearce, Hap Farrell, and Wylie Kirkpatrick.

Among the gleanings at the Alumni Day functions were the fact that the MacPhauls were expecting their fourth youngster; Al Barton, who is assistant vice-president of manufacturing for the Elgin Watch Company, has five children (three boys and two girls), and was at the Alumni Day functions primarily because it was his father's 65th reunion; Phil Stoddard has acquired a 15-foot sailboat and, of course, is utilizing it regularly on the Charles.

Will see you at the reunion next June. — ALVIN GUTTAG, *Secretary*, Cushman, Darby & Cushman, American Security Building, Washington 5, D.C.; SAMUEL A. GOLDBLITH, *Assistant Secretary*, Department of Food Technology, M.I.T., Cambridge, Mass.; MARSHALL D. MCCUEN, *Assistant Secretary*, 4414 Broadway, Indianapolis 5, Ind.

'41

The summer brought the following from Chet Corney: "I'm back in the veterans' hospital in Boston again but I'm hoping it will be a short stay. As of June 29, I will retire from Jackson & Moreland due to sickness. I intend to take a four-year course in music therapy at the New England Conservatory starting this fall." We hope the various treatments are paying off, Chet. And from Luis Jiminez-Michelena: "The last time I wrote was in reply to a questionnaire for the class register. At that time I said something about becoming a grandfather. Well, I did! Also a father. Both boys. Seems that I get these presents every time I am deeply involved in hard work: first when attending M.I.T.; then in Brazil during the last 'scuffle' (World War II); in 1955 when putting up a big project (international radio-communications) for Venezuela; in 1957-1958 while writing specs for a nationwide telecommunications plan (came the revolution in January, 1958, and the plan reposes in one of my filing cabinets under 'high futility'). Now I reluctantly accept a job at the Ministry of Communications as special consultant for telecommunications, and my wife Ursula gets the big idea all over again. It is rather becoming quite a habit!"

George Cherniak has been named director of flight test operations for Space Technology Laboratories at Cape Canaveral, where he will be responsible for technical direction and co-ordination of flight test phases for the Atlas, Titan, Minuteman, Thor, and related projects. He has been with STL since 1957, and had most recently been head of their Atlas project office. After graduation, George held staff research positions in the Aeronautical and Mechanical Engineering Departments of the Institute while continuing advanced studies. In 1942, he joined the consulting engineering firm of Lessells and Associates, and subsequently became vice-president and chief engineer. He later was with the management consulting firm of Anderson-Nichols and Company, and in 1952, he became engineering vice-president of Control Engineering Corporation (now the Military Products Division of American Standard). He has specialized in dynamics and instrumentation systems, has several patents, has published numerous articles in this field, and is a contributing author to several engineering handbooks.

Also in the technical breakthrough department, William Brown, now assistant vice-president and manager of Raytheon's advanced development laboratory, announced the development of a revolutionary high-frequency, high-power microwave tube, named the Amplitron, which makes possible the transmission of large quantities of electrical power without wires. Raytheon has announced plans to use the new tube as a source of power for space platforms which would hover at high altitudes at the end of an electromagnetic "extension cord."

In other business world news, Ted Walkowicz has been named a director of Allied Research Associates, Inc., of Boston, a subsidiary of the Vertol Aircraft Corporation. Davis Dewey, President of Baird-Atomic, Inc., has announced the purchase by his firm of four companies in fields related to atomic energy. The gross sales of the newly acquired companies are expected to add $1,000,000 to the parent firm's present annual volume of $7,000,000.

Bob Fano, with L. J. Chu and R. B. Adler, all of the M.I.T. staff, has written a book on *Electromagnetic Fields, Energy, and Forces*. George Newton, with L. A. Gould and J. F. Kaiser, also all of the staff, has written a book on *Analytical Design of Linear Feedback Controls*. Walt Kreske has been elected president of the Massachusetts Society of Professional Engineers. Luke Hayden, President of the City Savings Bank in Pittsfield, Mass., recently attended the annual convention of the National Association of Mutual Savings Banks in Atlantic City.

The Class can be proud of its record of contributing $8,308 to the 1959 Alumni Fund. This represents almost a 50 percent increase over the 1958 mark. Let's keep up the good work for the 1960 fund; you'll soon hear from Reid Weedon, if you haven't already. Read and heed Reid.

Present at the Alumni Day banquet on June 15 were Everett Ackerson, Johan Andersen, Hank and Mrs. Avery, Bob Blake, Mike Driscoll, Erling Hustvedt, Walt Kreske, Sam and Mrs. McCauley, Ed Marden, Max Schweinshaut, and Reid and Mrs. Weedon. — IVOR W. COLLINS, *Secretary*, 9 Sunnyside Drive, Dalton, Mass. HENRY AVERY, *Assistant Secretary*, Pittsburgh Coke and Chemical Company, Grant Building, Pittsburgh 19, Pa.

'42

This past hot summer seems to have been a quiet one for most of our Class. No doubt a growing number have swimming pools and made very good use of them.

We are much indebted to Charles Speas for a report on the Alumni Officers' Conference at the Institute in September; 1942 was represented by 12 men, one of the largest and most active groups. Charlie was present as class vice-president, class agent, Baltimore M.I.T. Club director and Baltimore educational council chairman. (In his spare time he is assistant technical director of the Hedwin Corporation — manufacturers of plastic shipping containers for all kinds of fluids.) Our class of 772 active Alumni now has a second class agent, William Herman. Those of you who read this literary effort more or less regularly will never hear from Bill. His special Alumni Fund mission is to follow up on the backsliders. (In his spare time he not only supervises film production for the Polaroid Corporation, but, with his wife's help, is redecorating every room of a big old house in Hingham.)

While the group was enjoying cocktails in President Stratton's garden your secretary-treasurer was nursing a cold and his private bottle of Canadian Club. Back to the conference: Monroe Brown, of Curtis Wright Technical Personnel, was present as an educational councilor. John Flipse, engineer at the Newport News Shipyard, is active on the educational council, Alumni Fund special gifts, and as a local club officer. Jim Littwitz, of Kodak's paper sensitizing, was representing the Rochester education council. Marsh McGuire, a purchasing agent for Pratt & Whitney in Hartford, was there, too.

Frank Seeley came not only as an officer of the Hartford Club but also to show the Institute to his eldest son. Seeley, Jr., is a candidate for the Class of '65. Also

present at the conference were: Robert J. Fay, William Hahn, Harvey Kram, Conrad Lau, Len Drennan and Jack Sheetz.

Speaking of Canadian Club, Ronald Shainin, our African wild animal collector and photographer has joined the ranks of adventurers whose close shaves are source material for the promotion of that soothing whisky. In case you missed the full page ads in *Time* and other popular magazines, part of Ron's text accompanying the four color pictures is as follows: "*A full-grown lion* is dangerous. 'And make no mistake about it,' professional hunters told me. Three-day journey north of Victoria Falls, in the high plateau country of Northern Rhodesia, a lion jumped me without warning. I raised my .458 Winchester and squeezed off a shot. Hit solidly, the lion still came on. I fired again. And again. Game to the last, the lion was almost upon me before it dropped. (The photographer fainted as he took the critical picture.) Usually a lion would run away. We must have startled this one at close range to trigger its surprise attack. . . . Only after the lion was dead did I realize how close it had come. Too close for comfort."

We sadly report the death of Gerard R. Torborg who took his master's degree with us after receiving his B.A. from Dartmouth. At the time of his passing he was an economic analyst for Standard-Vacuum Oil Company in White Plains, N.Y. He served in the Navy in World War II as a lieutenant. Surviving are his widow, Doris, and two daughters, Jane Ann and Carol Sue.

Life in the Rosenblum household has not been quiet this hot humid summer. Bruce David joined the family at 3:03 A.M. on June 30, after a fast ride across town. Every other baby born in recent years is said to look like Winston Churchill. But every relative and every neighbor needs no prompting to say Bruce looks like me. Oh well, his three and a half year old sister, Laurie, says that he's good looking.

A final report on the 1959 Alumni Fund: special gifts chairman, Carl L. McGinnis, and his hardworking committee are to be heartily congratulated for raising the number of special givers by more than 50 percent. This past year 39 of our classmates recognized the Institute's needs and their ability to help by contributing $50 or more. These gifts swelled our class total to $7719. Carl has again accepted the special gifts chairmanship. Another 51 percent would bring special gifts givers up to 60. Your support of the Alumni Fund in the past is very much appreciated. We do hope you will be able to continue and expand your individual support of the Institute's many important new activities.

Among the happy celebrants at the 11th Mexico Fiesta early this year was Jose de la Macorra. Ted Eliot writes that Jose has retired now that he and his family have sold their paper company to Container Corporation. Not yet retired is your secretary-treasurer — after a pleasant vacation trip to Sanford, Fla., last spring, I joined the operations research staff of Tech/ops. It is the only new company on Boston's circumferential new super highway which did not get mentioned in *Time's* feature article last spring. We are a group of physicists, chemists, mathematicians, and engineers who are concerned with computer and systems analysis problems. Most of the work is for a wide variety of government agencies, some military. During the past six months I have been working on radioactive fallout measurement and shielding problems for the civil defense organization and on the manufacturing problems of scientific and engineering journals. In the immediate future I will be responsible for systems analysis of a new high-speed weather data forecasting, communicating, and display system supported by the Air Force, Federal Aviation Agency, and the Weather Bureau. The objective of this $43,000,000 system is to reduce, by at least an order of magnitude, the delays in weather forecasting.

Lothrop M. Forbush is listed in the General Motors *Engineering Journal* as one of the inventors of a new combination hydraulic and mechanical brake, patent 2,859,839. Harry Carter is president of the M.I.T. Club of Puget Sound, manager of market research, and operations analyst for the transport division of Boeing Aircraft. As noted in The Review, last June, Dr. Frank A. McClintock became the first member of our Class to have been appointed a full professor at the Institute. Frank's field is mechanical engineering. Francis M. Staszesky, of the Boston Edison Company, was recently elected second vice-president of the Engineering Societies of New England. Arthur J. Power was elected executive committeeman of the M.I.T. Club of the Kanawha Valley, W. Va. — *Secretaries* ED EDMUNDS, Edmunds Chemical Company, Albuquerque, N.M.; BOB KEATING, Olin Mathieson Chemical Company, East Alton, Ill.; J. J. QUINN, Northrop Aircraft, Inc., Hawthorne, Calif.; and LOU ROSENBLUM, Tech/ops, Burlington, Mass.

'43

Your eastern secretary just returned from a two-day conference at M.I.T. for Alumni officers, during which we attended conferences concerning the Alumni Fund, educational counseling, and the work of the class officers and the M.I.T. clubs. Present from our Class were Burton S. Angell, Gustavo Calleja, Richard Feingold, James Hoey, Jr., William Lacy, Bernard Liss, Kemp Maples, Andrew Plonsky, and Raymond Richards.

The long distance travelers were Bill Lacy from Orlando, Fla., and Gus Calleja, from Havana, Cuba. All of us spent considerable time helping Gus with his class agent's letters which you have received by now. Bob Meissner of Chicago will be quite active in the Alumni Officers' Conference which is planned for Chicago on October 3, 1959. He is our class special gifts chairman, as many of you already know.

Frantz Kreider and Marilyn June Reed were married in Bridgeport, Conn., on June 27, 1959. The couple took a wedding trip to Glacier Park and Lake Louise and reside at East Orange, N.J. In July, Charlie Hathaway announced his candidacy for the board of education in Litchfield, Conn., running on the Republican ticket. We hope to obtain the results of the election soon for publication here.

Miss Maryalice Moore, who received her doctor's degree with our Class, is a professor of chemistry at Stonehill College in North Easton, Mass.

Postcards are being sent out requesting news for these notes every month. When you receive yours, kindly give your secretaries some consideration so that we can keep the interest, which our classmates have evinced in the past, up to par. You will be saddened to learn that George Musgrave passed away in July of this year. He had been living in Toledo, where he was with Claire Knox and Associates. Our sympathies have been sent to his family. — RICHARD M. FEINGOLD, *Secretary*, 10 North Main Street, West Hartford 7, Conn. *Assistant Secretaries:* CHRISTIAN J. MATTHEW, Arthur D. Little, Inc., 314 Battery Street, San Francisco, Calif.; JOHN W. MCDONOUGH, JR., R.R. #1, Donwood Drive, Naperville, Ill.

'44

The combined reunion of 2-44 and 10-44 was a terrific success. As you all know, no doubt, it was held at the Chatham Bars Inn, in Chatham, Mass., and 58 fellows with wives and some children were on hand. After coming home from the reunion, I jotted down some notes about some of the activities, which may start you thinking about the 20th reunion.

A fishing party consisting of Ed Jonash, his son Ronald, Charlie Simpson, Joe Shrier, and Paul Heilman, was organized Saturday morning. Some 200 pounds of fish were landed, and the first fish in the boat was brought in by Ronald, who sure has learned to fish in his first 12 years. Thanks to insufficient precaution with dramamine, one member of the party sure was happy to see shore again! On shore to check the fisherman's luck were Mal and Janice Kispert, Les and Anita Brindis, and Lou and Jane Demarkles.

As is usual on such occasions, Toastmaster King Cayce had the opportunity to award prizes to some of those in attendance. Herb Knape and wife, Glenna, thought they had the prize for the youngest baby, their 7th, with a birth date of April 25, until Lee Eagleton reported that his wife, Mary, was home from the hospital with little Elizabeth, born May 29. Joe Shrier received a prize for sporting the most visible skin on the dome. Bill S. Scott, who started from Dallas at 10:30 P.M. Friday to make the Saturday night banquet, finally had to make the last leg of his trip from Boston by train, because planes were not flying into the Cape airports. He was awarded the prize for coming farthest.

Bob Ilfeld and Nona arrived with their four children by car from Jackson, Mich., camping along the way. In Philadelphia, Bob picked up his parents and brought them to the Cape for their 35th reunion. John Granlund and wife Vee joined in the dancing contest, and ended up with a bottle of champagne on the house for their efforts. I'm told the bottle made it back to Lexington empty. Around the tennis courts there was considerable activity headed by Ray and Cynthia Gamundi, Bill and Barbara Abbott, Pet and Dianne Matthews, and Peter and Dorothy Rinaldo.

Early arrivals Friday night, checking for Old Salt at the Chatham Bars Inn, included Jay and Tink Martin, King and Pat Cayce, Frank and Angela Laurenzano, Henry and Betty Moore. Lee and Edith Corton brought Ira and Joyce Kessler from the class of '46 as guests and a check before their departure revealed that they'll be with us for the 20th.

Charlie and Joan Simpson and Dotty and Joe Shrier arrived Monday at Alumni Day with slightly smoked clothes. This came from practicing the old New England custom of "sneaker-baking." It started when someone left a couple of pairs of rubber sneakers on the register in the cottage to dry. Charlie advises that innkeepers in Cohasset recognize the plight of true sneaker-bakers, and set up hot buttered rums on the house.

Pete Quattrochi aided by wife Eleanore, got the singing going by heating up the piano. Some of the star singers in the crowd included Dick and Nancy Soderberg, Tom and Jill Carmody, Bob and Virginia Jevon, Norm and Nancy Beecher, Jim and Maire Hield, Pete and Dianne Matthews.

On Alumni Day I saw Caesar Spero and his wife, but we didn't get a chance to talk. Also saw Martin King, who lives in Fairlawn, N. J., and says he recently ran into Mort Meyer who has three sons,

and is with Anti-Hydro, a company that manufactures a concrete waterproofing compound. Dick Whiffen was also there but I didn't get a chance to talk to him. Sam and Betty Morrison were at the lunch, and said they have two girls and a boy, and are living in New London, where he is with Electric Boat.

Scott and Barbara Carpenter had to leave the reunion Saturday night, as he had to catch a plane to Mexico City. The wellwishers in the party included Henry and Betty Bowes, John and Betty Hull, Jay and Rita Kogan, Ed and Bobby Roos.

Since a number of fellows acted as roving reporters I don't vouch for 100 percent accuracy in connecting up sports and "sports." If errors were made, drop me a note and they will be corrected.

I'll continue the rundown of activities in next month's column. Also I'll give a report on the questionnaire and the composite answer to such questions as: Would you send your son to M. I. T., and have you been psycho-analized? Watch for this column next month. — PAUL M. HEILMAN, 66 Central Street, Wellesley, Mass.

'45

This is a reunion year; make your arrangements for a sitter now, for June 10-12, 1960, is not far away — especially when one considers that 17 years ago many of us were leaving home for the first time, not fully aware of all the Institute life had to offer. It was a mid-September weekend in 1942 that we checked into the dorms, pledged a fraternity, and attended Freshman Camp. By the time these notes are published we had experienced several Friday morning quizzes and a few of us had found our way to Dingee's Thursday cram session at the Riverside. Yes, you should plan to return and relive these days and many others with your fellow classmates next June 10-12.

Our 15th reunion headquarters will be Snow Inn, flush on the shore at Harwichport — on the Cape — Mass. Your committee had a few trying moments this past June and July before this site was finally selected — actually it is an interesting story. As had been the practice the past several years, Don Severance arranged a mid-spring meeting of reunion committee chairmen to discuss reunion ideas and problems with that year's representatives as well as the next year's representatives. At last April's meeting Dave Trageser and Jerry Quinnan represented our Class and during the course of the meeting Dave indicated we hoped to go to the Snow Inn. These plans were delayed as a 1940 representative indicated his class intended to return to Snow Inn since they had such a gala 15th — an abrupt stall one might say! Activity came to a head the middle of June. Fran and I attended 1944's 15th at Chatham Bars Inn as guests and had such a wonderful time that we immediately signed up our Class for next June. Out of the woods, but not for long; the following Thursday the Chatham Bars manager called to say he had made an error. He was overbooked for the weekend and since we were last in we became first out. The same evening I talked with the manager of the Belmont in Harwich and made tentative reservations. Within the next several days we had tentative reservations at a half a dozen other locations — all contingent upon inspection. Our Cape Cod inspection team was comprised of July vacationers Bill McKay and Jerry Patterson who closed with Snow Inn, July 25.

As indicated above Fran and I attended the '44's 15th reunion and what a wonderful time we did have! Paul Heilman undoubtedly has reported the details above in his notes; the best we can do is add our thanks again. True it was not the best weather but the rain did not dampen the spirit, in fact it probably stimulated the consumption of spirits. Fifteen years does not change people nearly as much as you might expect. Yes, the years add a few pounds and remove a few hairs, but all in all the personalities remain unchanged. The following Monday, June 15, Dave Flood — in Dave Trageser's absence — and I were to represent the Class in the academic procession for Dr. Julius Stratton's formal inaugural as President of the Institute. As reported in the July issue, the weather curtailed the inaugural ceremonies and we did not march, much to my disappointment, for I had been looking forward to wearing a cap and gown. It would have been a first, for most of us — as you will recall — graduated in sticky whites.

The following attended the Class Day banquet: Dave and Janice Flood, Jim Gurney, Charlie Hart, and Bob Maglathlin with wives, as well as Tom McNamara, Warren Miller, and Jerry Quinnan. Unfortunately, Fran and I did not have an opportunity to talk with anyone for we hastened back here to Stamford immediately after the inauguration.

Last April Jim Barrabee wrote from Ann Arbor, Mich., to report that he is chief quality control engineer for Hoover Ball and Bearing Company, after many years in Milwaukee with International Harvester, as I recall. As Jim wrote about a month after his move, I thought his comment that the kids — Lisa, six years, and Dave, two years — had acclimated themselves better than their parents was most appropriate. Just before he left for six weeks in Europe — business and vacation — Dave Trageser wrote to report he had run into Ross Compton. Ross works for Arnco Steel Corporation in Middletown, Ohio. While in Washington in early May, I ran into Bob Turner and his wife in one of the better bistros. Chub and Cynthia Smith'52 met about four years ago in the Pentagon where Chub was working for M.I.T.'s Development Group. It seems that Cynthia was the girl that passed on Bob's expense account during his year of field work in Japan. The Turners with son Charles, about one year, live out in Silver Springs as Chub now is with John Hopkins Applied Physics Laboratory. Chub filled me in on H. Paul Grant's activities and Flowco in Cambridge — also the story of how Paul left the Graduate House unexpectedly. Yes, Paul on the hundredth odd try was caught coming in the Mass Avenue exit in the wee hours of a cold winter morning. A week or 10 days ago while waiting in a client's outer office, I struck up a conversation with another peddler and was most surprised to find myself talking with Clif Corbett'47. Clif, as you may recall, was a Lehigh transfer and Company Seven fixture; he roomed with one of our classmates, Frank Strobino. Clif is a sales engineer for Industrial Nucleonics, manufacturers of AccuRay process control systems. While in Europe Dave Trageser wrote that Tom and Betsy Hewson were on the same jet flight, starting a six-week business-pleasure tour a la St. Regis Paper.

Last February Dr. Ed Kelly of the Institute staff participated in a discussion panel entitled, "Automation in the Soviet Union," at the American Institute of Electrical Engineers winter meeting in New York. Another classmate, Dr. Dick Battin, Assistant Director of the Instrumentation Laboratory, was the featured speaker at the Northeastern Dental Society's annual meeting in Swampscott, Mass. His subject, "To Mars and Back," was based in part on a paper he had presented at the January meeting of the Institute of Aeronautical Sciences. Dick received his Ph.D. in Applied Mathematics in 1951 and has done considerable basic research in the fields of hydrodynamics, analog and digital computing techniques and missile guidance systems. Richard is co-author of the book *Random Processes in Automatic Control.*

In June, Hedley Patterson, a sales engineer for Garlock Packing Company, Boston, received an M.S. degree form Northeastern University. Edward R. Fryer, Jr., was listed in the spring issue of *General Motors Engineering Journal* as inventor, with William J. Adams, of a hydraulic power unit for tractors equipped with power-operated implements. Phil Brady of Melrose, who left us at the end of our freshmen year to attend West Point was recently promoted to Major. Phil is now stationed at Picatinny Arsenal, Dover, N.J. Randy Esten was promoted recently to the position of assistant chief of the Map Compilation Branch at the Army Engineer Research and Development Laboratory, Fort Belvoir, Va.

That's it for now. Next month I shall fill you in on our Texas operations for I have a lengthy letter from Nick Mumford, a report on Jerry Patterson's annual pilgrimage to New York City, and a rundown on our Alumni Fund participation.

Happy Thanksgiving — CLINTON H. SPRINGS, *Secretary,* 420 Lexington Avenue, New York 17, N.Y.

'46

Welcome back, one and all, to the deathless prose circuit. I have an eerie feeling that the one and all should have been one or two, however, since my passionate plea for letters and news in the last issue of this magazine went almost completely unnoticed. Bill Schield wrote us a letter postmarked prior to the July publication date, so Jim Goldstein's letter is the only bona fide response to the appeal. If YOU have not written for lack of a four cent stamp, send your letter C.O.D. and I'll pay the postage out of my large secretarial salary. Even if you are not interested in reading about yourself in these columns, other classmates will be.

Bill Schield enclosed a card in his letter informing us that he has joined the firm of Robert W. Baird and Co., members of the New York Stock Exchange, as a registered representative. He writes: "I've been in the securities business now for about nine months and really love it. Before entering the field of finance I came very close to buying a business in Mount Vernon, N. Y., and spent a couple of months last summer investigating such a possibility. At that time I had the pleasure of spending a fair amount of time with classmates Ray Brown, Bill Jackson and Bob Spoerl and their wives in the New York area. Since Cleveland was such a good mid-point between Milwaukee and the East, I took advantage of the Hansell hospitality for overnight stops. The business deal didn't go through, but it was a lot of fun being with the gang again. Family-wise, Charlotte and I have two daughters, 8 and 4, one son, 3, and another addition is expected the end of August." Bill's business address is 110 East Wisconsin Ave., Milwaukee 2, Wis.

Jim Goldstein's letterhead reads, in large letters, Stanley James Goldstein, A.I.A., Architect and Engineer, 25 Halsted Street, East Orange, N.J. He writes: "Your pleas for information from our classmates have not gone entirely unnoticed. I take typewriter firmly in hand, at 90 wpm, and pass along a few lines of

copy for your column. Rosanne and I, with our two boys, Roger, 7, and Eliot, 4, occupy a little glass shack near the railroad tracks (DL&W) in West Orange. I have a small office for the practice of architecture and engineering in East Orange, and cover most of the state, and the New York metropolitan area. We've been in New Jersey now for nearly six years, since we got out of the Navy for the second time (two years in Washington, building a wind tunnel in suburban Maryland's David Taylor Model Basin). Did some industrial work for Bob Fried about a year ago to enable him to expand his ice cream scoop operations (he's got a terrific product, by the way). And C. S. Lyon is aiding both Bob and me in some patent applications. So I do run across members of our Class, I am pleased to say. Last year we were pleased to entertain the Hansells, Feldsteins and even Bill Schield from Milwaukee, having talked them into driving through West Orange on one pretext or another. I'm keeping my Ivy League ties in order, because of a recent appointment as visiting lecturer in the Graduate School of Architecture at Princeton. I hope this won't disqualify me for the 15th reunion of our Class year after next. Oh yes, we did manage to seek out the Ritterhoffs two years ago on a quick trip to Philadelphia, and enjoyed a pleasant afternoon reviewing old Navy days."

On a recent business trip to the Bendix Aviation Company in Kansas City I bumped into Jack Reed. Jack started in with us V-12ers but didn't last too long, having to leave our happy group as a result of l'affair du hypnotism. Jack and I had an interesting half hour recalling some of the more humorous aspects of our brief association. Continuing with the personal note, Jan and I attended a summer playhouse production this past summer and bumped into Stu Edgerly and his wife. As a result I was able to congratulate him personally on his appointment as general sales manager of Fenwal, Inc. Stu joined Fenwal in 1955 after first graduating from Harvard Graduate Business School and then serving as sales manager of the Potentiometer Division of the Fairchild Camera and Instrument Corporation. His first Fenwal assignment was to establish an industrial sales division to market the company's temperature controls. He was promoted to assistant general sales manager, and now is top banana.

Attendees at the Alumni banquet last June were Thomas Brockenbrough, Don Hurter, Mason Lappin, Clif Sibley, Ned Tebbetts and your truly. The third Alumni Officers' Conference will be held next week (this is being written on Sept. 2) and I expect our Class will be well represented. I'll report on that affair next month. Thanks again, Bill and Jim, for your letters; I hope your good example will be followed by many others. — JOHN A. MAYNARD, *Secretary,* 15 Cabot Street, Winchester, Mass.

'48

As a mental escape from this chilly November weather, let's go over some of the events which occurred during the past long, hot summer. Before I begin, however, I hope everybody had a wonderful summer vacation at the seashore, or up in the mountains, or traveling, or whatever.

According to announcements I have received, our Class is minus three bachelors. In May, Sam Gardner was married to Helen Kleiner. Sam is with M and M Candies in Hackettstown, N.J. In July, Ralph Reis was married to Barbara Backlar in New York, and Bob Rannow married Jane Stanton.

There were many representatives at the Alumni banquet held June 15: Martin Billett, Bob Bliss, Phil Bragar, Bob Crooks, Bill Katz, Dan Levin, Bob Lovezzola, John Mitchell, Fred Radville, Graham Sterling, Frank Tuttle, and Verity Smith. Accompanied by their wives were Dan Fink, Sam Levin, Goddard Parsons, Vincent Vappi, Dick Worrell, and John Worton.

I feel sure that the June graduate with the largest cheering section was Bill Nemitz, who received a master of business administration degree from Northeastern University. Bill is the proud father of five children. Amongst other June graduates were Orville Bean, who received his master of science degree in electrical engineering from Northeastern; John Worton, who received a master's degree in business administration from Harvard; and Dick Davis, who received a bachelor of law degree from Harvard. Hearty congratulations to all of you.

Herb Marcus has become associated with his brother in Production Systems, Inc., in Waltham. He was formerly with Minneapolis-Honeywell. I had a recent letter from John Wright, who brought me up to date on his current activities. He retired June 30 as a naval aviator and is employed by Daystrom Systems in La Jolla, Calif. He commented that his company is currently hiring resident engineers, so if anyone is interested in contacting John his address is: 4455 Miramar Road, La Jolla. Lyman Morgan, who is associate professor of petroleum refining engineering at Colorado School of Mines, spent the summer serving as a consultant at the technical division of Humble Oil and Refining Company's Baytown, Texas, refinery. Elias Corey has been appointed a professor at Harvard. He was formerly an organic chemist and professor at the University of Illinois. Foster Furphy has been assigned as comptroller with the Army Ordnance Missile Command at Huntsville, Ala. He holds the rank of colonel. A new faculty member at New Mexico State University is John Giever, who received his Ph.D. from Tech.

Lawrence Levy, President of Allied Research Associates, Inc., addressed a Rotary Club luncheon a while ago and discussed plans for his company's proposed $1.5 million expansion program in Concord. I haven't yet heard if the firm has been successful in having this land rezoned for business. Keynoting a four-day course in "Heating and Cooling by Forced Air" at Northeastern in early summer was Ed Scott, editor of the *Heating and Air Conditioning Contractor,* Tarrytown, N.Y. Discussions were held for purposes of approaching design problems to be carried out according to levels of advance knowledge about heating and cooling problems.

Dean Burchard has asked me to express his appreciation to all those who responded to his letter of July 6 requesting an interpretation of the inadequacy of the humanities option which appeared in the *Tenth Year Profile.* The response has been very good, and he plans to summarize the results and make a further report some time in the future. — RICHARD H. HARRIS, *Secretary,* 26 South Street, Grafton, Mass.

'49

Our 10th reunion was thoroughly enjoyed by those who made it to the Curtis Hotel in Lenox, Mass., last June 12, 13, and 14. Co-chairmen Russ Cox and Kemon Taschioglou and their program committee members managed everything to perfection but the weather. Full details of the reunion and the myriad and multitudinous information garnered from our classmates by the questionnaire will be serialized, starting as soon as Kemon can be tracked down in his temporary lair on the West Coast and the myriad information recovered from wherever he has it squirrelled away. Try this space next month to see if the melange of multitudinous, mellifluous, and memorable memoranda is moving yet. To whet your appetite, we announce only the results of the election of class officers, a benighted group, duly railroaded into office by those attending the reunion, as follows: President, Russell N. Cox, 103 Loring Rd., Weston, Mass.; Vice-president, Charles W. Holzwarth, 2034 Hawthorne Drive, Rockford, Ill.; Treasurer, Stanley V. Margolin, 215 Grove Street, Auburndale 66, Mass., and for the Secretary's address, see below.

While I do not yet have a complete class file and the other secretarial appurtenances, some news items did manage to reach me in time for inclusion this month. The first of these concerns Michael K. Bonner, electrical engineering-communications option, who now heads up Technology Associates in New York City, formed this spring as a specialized technical publicity service to engineering and sales management. Bonner was vice-president and general manager of Harry W. Smith, Inc., New York, prior to this. He started with them nearly 10 years ago after a brief stint as a development engineer at Hazeltine Electronics Corporation.

A release from Baird-Atomic states that Dr. Herbert M. Hershenson has joined them as assistant technical director, product planning. Since Herb obtained his Ph.D. in analytical chemistry from M.I.T., he has led an active professional life: assistant professor of chemistry at Wesleyan University and the University of Kansas, adjunct associate professor of chemistry at the Hartford Graduate Center of Rensselaer Polytechnic Institute, supervisor of analytical chemistry at the Connecticut Aircraft Nuclear Engine Laboratory of Pratt and Whitney Aircraft, and group leader in the metallurgical laboratories of Olin Mathieson Chemical Corporation.

Carl A. Lindstrom, Jr., is on leave of absence for a year from Cryovac Company. He and his family are in Paris, where he is studying physical chemistry on a Fullbright scholarship. He is at the University of Paris and will do research work under Professor Michel Magat.

Paul B. Ostergaard, meteorology, has joined the firm of Lewis S. Goodfriend and Associates, consulting engineers in acoustics, as senior engineer. The firm is located in Montclair, N.J. Before this, he was staff acoustical engineer with the Carrier Corporation. He is now living in West Caldwell, N.J.

Many of us at the class reunion this spring were unable to make the Alumni banquet on June 15, but 1949 was well represented by those who attended; 17 Alumni brought wives along, 11 more came unencumbered, while one Alumnus came with an Alumna, the Kunstadters, John and Geraldine (Sapolsky). Other Alumni with wives were John Barriger, Jim Berman, Aldo DiMascio, Robert Griggs, Summers Hagerman, Archie Harris, Chuck Holzwarth, Edward Lady, Philip Lynn, Howard Millard, Russell Morris, Lewis Roosa, Tom Toohy, Art van Stolk, Emilio Venegas, Thomas Weil, and Eugene Woodward. Solo attendees were William Bohlman, Mason Campbell, Raymond Cleveland, Earl Eames, Edward Lanpher, Joseph Lynch, George McQueen, William Maini, Martin Murphy, Robert Walton, and Edward Walz. — FRANK T. HULSWIT, *Secretary,* 14 Nadine Road, Saxonville, Mass.

'51

Two more classmates walked down the aisle last June to join the ranks. On June 13 Walt Sawyer was wed to Raye Smith of Middleboro, Mass. They are making their home in Mattapoisett, where Walt is working for Burr Brothers as a naval architect. On June 6 John Pasieka and Patricia were married in Melrose, Mass. Bob Lucas was John's best man. The Pasiekas are living in South Acton, Mass. Other family news tells of births. On May 20 Bruce Findlay joined the Dave Findlay family. On June 11 Charles and Jeanne MacDonald welcomed Joan Harrison to the MacDonald fold. The family of Richard Hodgson, which includes five children, celebrated a 10th wedding anniversary by traveling from Aruba, where Dick is employed by Standard Oil, to spend two months in Staunton, the old home town. Dick has been in Aruba for two and a half years. June is the month for degrees, too, and Saul Neidleman received his Ph.D. in bio-chemistry from the University of Arizona. Vern Kenney received a master's in business administration from Rutgers. June is Alumni Day month, and at this year's Alumni banquet four '51ers attended; Charles Hiecken, Fred Lehmann, Charles Orne, and Edith Roberts holding the '51 banner.

Tony Stathoplos was the recipient of an award in a nation-wide competition for his design of a low-cost shielding device or reflector for use with small nuclear reactors. Tony's design was selected from more than 150 entries and is featured in a recent issue of the magazine *Materials in Design Engineering*. Tony is working for the Nuclear Development Corporation of America in White Plains. Another award went to Edward Handy for outstanding performance as community planner for the Urban Renewal Administration in the regional office of the Housing and Home Finance Agency at San Juan, Puerto Rico.

Mike Hoffman is back at Tech as an assistant professor after a three year leave of absence serving in the Air Force. He was last in the DynaSoar Project Office in the A.R.D.C. Directorate of Systems Management, Wright Patterson Air Force Base. Mike teamed with another aeronaut to publish "Alternate Range Prediction in Flight" in the August issue of *Aero/Space Engineering*. Army Captain, Francis Davis, has completed the officer advanced course at the Signal School, Fort Monmouth. Francis has been in the army since graduation and has served a tour in Europe. John Salzer has joined the technical staff of the vice-president, engineering, of Ramo-Wooldridge. Formerly he was director of systems at the Magnavox Research Laboratory and prior to that he was with the Hughes Aircraft Company. Glenn Eichenseer is engineer for the Automatic Merchandising Corporation of Medford, Mass., a 10-year-old firm that installs automatic cafeterias serving everything from soup to sandwiches to apple pie and ice cream.

A welcome letter from William Ramsey brings us news of his doings: "I have just recently been promoted to senior project member, technical staff, of the RCA Missile Electronics and Controls Department located in Burlington, Mass. I have also been elected to the post of secretary-treasurer of the Boston chapter of the Professional Group on Aeronautical and Navigational Electronics, Institute of Radio Engineers." Congratulations to William and thanks for his letter. Why don't you write? — RICHARD W. WILLARD, *Secretary*, Box 105, Littleton, Mass.; ROBERT S. GOOCH, *Assistant Secretary*, 407 Danciger Building, Fort Worth, Texas.

'52

Having safely settled down with cooler weather, we take the typewriter in hand and wish you all a successful year. Last year finished off in June with our second annual off-year reunion cocktail party at the Faculty Club, on Friday evening before Alumni Day. 1953 and 1954 were also holding parties and we had a most successful time with about 75 or more people, including the Lou DiBonas (still with National Research Corporation in Needham), Ed Schwartz (from Detroit where he is with Merrill, Lynch, Pierce, Fenner and Smith), and cheerful as always, Sandy Isaacs who has just joined IBM, the Bob Luries (Bob at Dewey and Almy), Rick Heitman (recently joined Arthur D. Little, Inc.), the Jim Stockards (Jim is teaching at M.I.T. and working for his doctorate), Dan Sullivan, Nate Sivin, the Stan Buchins, Stan Sydney, Nick Melissas, the Herb Eisenbergs, the Harvey Eisenbergs, and many others. Since this has worked out so well for two years, put it on your calendar *now* for the Friday evening before Alumni Day in June. The evening will begin with cocktails at 6:00 P.M. or so, and, if you wish, dinner afterward at the Faculty Club. Darn fine show!!!

Class President Bob Briber, with Kathy and young Robert, is back in their home in Lexington from Washington after a trip to Denver. Bob is now at Polaroid as administrator of research projects, responsible to Dr. Land. Burge Jamieson is now at Adage, a new and thriving electronics firm in Cambridge, in the position of engineering manager.

An interesting letter came from Hugo Bosch from Rotterdam who writes that after leaving M.I.T. he served two years in the Dutch army, three years with a consulting firm in Rotterdam, and is now with the Central Organization Department of U.N. Unilver, Rotterdam (associated with Lever Brothers, N.Y.), where his concern is with factory layout and stock control throughout Europe. Also, he is now married and has a son of one year.

Robert B. Brown, Jr., is now a sales engineer at Hydro Aire (Crane Corporation) in St. Louis, handling anti-skid braking systems, fuel system controls, and so on. Gino Scalamandre is now a vice-president at Scalamandre Silks, Inc., and runs the Long Island City mill with 200 looms and 300 employees turning out 500,000 yards of silk fabrics per year.

Chuck Beaudette's firm, Oichro (of which Chuck is the "ch" and one of the three founders) in Newton, Mass., is steadily rising. The company makes angular measuring devices. Doug Haven is returning to M.I.T. to join the Alumni Fund as regional solicitations director, as will be announced in more detail by the Alumni Association. Roger Borden has been named assistant professor of mechanical engineering at Worcester Polytech. Recently advanced degrees for '52er's include Kevork V. Nahabedian, Ph.D. in chemistry from the University of New Hampshire; Allen C. Pipkin, Ph.D. in applied mathematics from Brown University; Ernest Capstack, Jr., Ph.D. in chemistry from Brown University; Daniel J. Horen, Ph.D. in Physics from Stanford University; Edwin L. Child, a master's degree from Harvard in public health; and Rodney A. Stuart, a master's degree in business administration from Harvard.

Newly marrieds include Frank Gauntt and Kathleen McCarthy in Boston, Robert C. Lynch and Rosemarie Ann Colella in Lynn, and Robert E. Johnson and Nancy Humphrey in North Quincy, Mass. The Jim Davidsons announced the birth of their first child, Leanore, in July, from Teaneck, N.J.

Colonel Richard K. Jacobson of the Air Force, who has been working with the Air Force Ballistic Missile Division, where he has been instrumental in setting up the test facilities for missile systems including Thor, Atlas, and Titan, has now moved to Washington, D.C., to fill a position with the Air Research and Development Command. Lt. Col. Francis J. Hale is returning to M.I.T. to begin work on his degree in astronautics. Captain Daniel L. Lycan is with the Corps of Engineers in Vicksburg, Miss., working on a study designed to minimize dangers and damage of atomic blasts. Well, the end of the mailbag has been reached. Please, won't *you* drop a line, or fill out the blank enclosed in the Class Agent's letter to let us know what you are doing and help keep this column up to date. — DANA M. FERGUSON, *Secretary*, 252 Great Road, Acton, Mass.

'53

September and back to press again. Am not organized. But here goes. Will start off with bits and pieces, and then end up with the information you mailed in last summer.

Al Lazarus is back in town after a sojourn in California. He was offered and accepted an instructorship in the Physics Department here at M.I.T. It will be good to have him around again. Likewise, Al Danzberger has returned from his special mission out on the West Coast; still with Arthur D. Little, Inc. And, young Al Danzberger, Jr., paid a surprise call shortly after his mother and daddy were involved in a very late bridge game with yours truly and his wife. (This is their second child; the other is a girl.) About a month later Paul and Ginny Shepherd said "How do you do?" to their third youngster, Colin Paul. Don't know his exact title, but do know that brother Paul received a substantial promotion at Cabot, Cabot, and Forbes a few months ago. The November '58 Tech Review was indeed accurate in forecasting the fate of Dick Lindstrom. His engagement to Carolyn Louise Powers was announced in June: the marriage is planned for October.

Tom Moore was recently married to Sandra Arrones, a Radcliffite: he is now working on his Ph.D. in economics at the University of Chicago. Pete Noonan also took the big step this summer. In early August he married Margaret Elizabeth Ryan, a Vermonter and graduate of Regis College. Ernie Rifkin is apparently doing great things with Electric Boat General Dynamics in Groton, where he is a mechanical engineer in the research and development department. He invented an "impingement type moisture eliminator." The patent disclosure was accepted by General Dynamics and as a result Ernie received a bonus acceptance check and 15 percent of any resulting royalties.

Another batch of marriages to report. Joe Molloy was married this May to Janet Fletcher, who attended Wells College and was graduated from Wilson College in Chambersburg, Pa. A month later Ann Ruth Kennedy and Redmond O'Brien were married. Redmond is now working for Sylvania, and received both his master's degree and doctorate at Tech. His wife graduated from Northeastern University and teaches at North Quincy High School. George Cheney and Georgiana Marie Palmer were also married during June, and are now living in Walpole, N.H. George has a degree from Middlebury College as well as Tech and is now em-

ployed as project engineer at Bryant Company in Springfield, Vt. Georgiana attended the University of Munich, the University of Maryland, and graduated from the University of Washington.

Notices were received on recent graduate degrees awarded to classmates. Among those receiving the master's in business administration from the Harvard Business School this June were: Robert Esch, Donald Fischer, Carl Schroeder, and Jeffrey West. Also, Burt Blum finished his M.S. this June at the University of Akron.

Fred Kreitner has been engaged in missile guidance systems engineering, following the completion of his master's degree at Tech in 1954. However, he just changed jobs and is now a senior engineer in the systems engineering department of the marine division of Sperry Gyroscope Company. Louis de Branges is taking a year's leave of absence from Lafayette College, where he is an assistant professor of mathematics, to become a member of the Institute of Advanced Study at Princeton. Since graduation from Tech, he has earned his Ph.D. at Cornell University and managed to squeeze in his commissioned service in the Army prior to teaching at Lafayette.

Bob and Lois Beale moved to the West Coast this June, and in early July announced the arrival of a daughter, Christine. Bob formerly worked for the Martin Company but seems more satisfied at the Jet Propulsion Laboratory of the California Institute of Technology. He is senior development engineer in the systems group of the propulsion development section on Project Vega in Pasadena. They are living at Altadena, Calif., and added: "We all love California and since we have a large house, we expect all of our friends and relatives to visit us."

Rudy Kalman was married to Constantina Stavrou on the 12th of September, in Washington, D. C. After finishing his doctorate at Columbia University, Rudy took a position as staff mathematician for RIAS in Baltimore. Rajat Purkayastha finished his master's degree at the Harvard Business School and is now back in India (Calcutta) working for Imperial Chemical Industries as shift superintendent in the polyethylene plant. Zane Yost and Megan Owen were married about a year and a half ago at the M.I.T. Chapel and now live in Ridgefield, Conn. He is an architect for Victor Christ-Janer in New Canaan; travels occasionally to Painesville, Ohio, where they are rebuilding a girls college. (Some guys get all the breaks!) Chuck and Betty Brown (and little Charles III) are living down in Louisville, Ky., where he is product manager of the sheet and plate division of the Anaconda Aluminum Company. His job requires him to travel all over the country on a regular basis. Cleyon Yowell is a member of the technical staff of Hughes Aircraft Company in Fullerton, Calif. He is engaged in radar studies and design; picked up his M.S. at the University of Southern California in the meantime. He and Laura have been roaming around quite a bit, visiting Mexico City a couple of years back and journeying over to Europe for two months this summer.

David and Joan Daniel have two young boys and are living in Alexandria, Va. He is project engineer in electronic engineering for the United States Army Security Agency and is working nights for an advanced degree at American University in Washington. Barry and Erika Lichter have been married a little over a year and are living nearby in Watertown. Barry has his doctorate and is working as a metallurgist for the Air Force Cambridge Research Center in Bedford, Mass. Lawrence Truppi completed his master's degree at Texas A and M College, and is now a meteorologist (principally, research and development) with the Weather Bureau of the U. S. Department of Commerce in Asheville, N.C. Sidney Gravitz was at Tech until 1957, completing both his M.S. and a professional degree in Aeronautical Engineering. He is now employed by North American Aviation, Inc., in Columbus, Ohio; he is group engineer, dynamics development group (research and preliminary design work in the dynamics area).

Robert and Beverly Chapman, plus their family of two (a boy and a girl), are living in Wallingford, Conn. He works closeby in Meriden for the H. Wales Lines Company as project engineer (primarily construction supervision). Jack Tracy is working for the National Hurricane Research Project in Miami, Fla., principally engaged in research and development work as a meteorologist. He and Betty Jean have three children, two girls and a boy, ages 11, 4, and 6 months. William and Virginia Young (and a boy of four years) are living in Ventura, Calif., where he is an engineer with Shell Chemical Corporation. Another Californian is Bill Mitchell, who lives in San Francisco. He works for California Research Corporation. Jack Dennis finished his Sc.D. in Electrical Engineering at Tech in September, 1958, and is now an assistant professor in the same field at M.I.T. He is also doing research in automata and mathematical programming. An interesting note; he married a Tech coed, Jane Hodgson (Class of 1955), in June, 1956.

Vincent and Florence Verlangieri and their two boys are living in Temple City, Calif., closeby to Pomona, where Vincent is a flight analysis engineer for Convair. Bob Piper is still maintaining bachelor status and still working for "Uncle Sugar (Civil Service) U.S. Army Transportation Research and Engineering Command, Army Aviation Division," as an aeronautical research engineer. He also reports considerable traveling to California, Cambridge, New York, Detroit, Atlanta, and Dayton. Bob also adds: "M. J. Friedenthal still maintains Space Technology Labs and resides in Santa Monica with Jane." . . . Will sign off now. To be continued next month. — MARTIN WOHL, *Secretary*, Room 1-131, M.I.T., Cambridge, Mass.

'54

As autumn falls about us once again, the Class of 1954 enters its second half-decade of alumni status with a new board of governors and with its first reunion very successfully completed. The big blast at North Scituate last June was, to understate the case, thoroughly enjoyable. Circumstances forced a last minute change of plans which prevented your chagrined secretary from attending, but reports received from attending classmates more than justify the above comment. In any event, we do have a report on the reunion, which follows.

As a result of the elections held during the reunion, Bob Anslow is now president of the Class, Chuck Masison takes over as vice-president, and ol' Ed Eigel (that's me) stays on as secretary-treasurer. In addition, we have five regional vice-presidents, each charged with trying to keep track of the members of the Class who drift into his assigned area. These are Tom Gibbs in the New England-New York region, Fred Bowis in the South, Rich Wilson in the Midwest and North, Mike Boylan in the Mississippi-to-Rockies area, and Sam Losh on the West Coast.

Some of the highlights of the reunion were the awards given at the Saturday banquet, the plentiful and serious conversational exchanges, the general lack of sleep and the rain, rain, rain. Among those honored at the banquet were Matt Baczewski, who got the cup for coming the longest distance, 3100 miles (actually, Matt tied with Sam Losh, but won the flip of the coin); Dean Jacoby, who was singled out as having the least hold on freedom (he was married less than a month later); and Bob Anslow, who was presented with a red "hero" sash by Dean and Ron McKay for the fine job he did organizing the reunion.

Among the many news items gleaned from those attending the reunion, we find the following. Tom Gibbs is now the proud papa of two, Desiree and Lauren. George Klein is in applied research with Shell Oil in Texas, "attempting to develop a better means of determining the porosity of shaly sand. Quite a change from Course XV, but I can thank my lucky stars that M.I.T. gives every student a good background in the fundamentals of all the basic sciences." Well said, George. Dave Springsteen and his wife Nancy are located in Eastchester, N.Y., where Dave hides when not toiling for Chase Manhattan Bank in New York City. Decker McAllister is back at Stauffer Chemical Company in California, after taking some time off to see the sights in Korea and to marry Judy Church. Tom Bastis and his wife are now running after young Mark Frederick as well as his older brother Jonathan Thomas. Ray Rivero has left the Joy Manufacturing Company and has become chief industrial engineer at MKM Knitting Mills in Manchester, N.H. Dick McKee has acquired a Ph.D. in chemical engineering and is now working for California Research Corporation. Roy Riedinger is with Procter and Gamble, in charge of Ivory Soap production, at their Baltimore plant. Dick Lane is beginning his last year at Harvard Law School. Matt Baczewski and Harry Taylor are doing their best for Aerojet-General in California. And Jim Athan was at the reunion with his whole family, but no one caught them all in one spot; they remain uncounted but numerous.

We will have more news items from the reunion, plus some statistics from the mimeographed questionnaires passed around at the meeting, in next issue. In the meantime, we have a few items from other sources. As was indicated above, our retiring president, Dean Jacoby, was married on July 11 to Judith Kate Haywood of New Canaan, Conn. Bob Anslow, Ron McKay and Warren Davis all had active roles in the wedding. Dean and Judy are now living in Montreal, where Dean has some sort of position with Payne-Ross, Ltd. Dick Hayes married Ellin Abbott Donoghue on June 6 in Milton, Mass., with Rog Griffin and Art Jacob among the attending functionaries. Dick is still with the Air Force, currently assigned to M.I.T. for graduate work. John Graham and Frances M. Gangi were married in Lawrence, Mass., on May 30. The Grahams are now living in Andover, Mass. Wally Boquist was married in May, also, but all we could find out about the wedding is that his wife's name is Constance. Dave and Connie Wones have a new son, Edward Martin, born June 21. Rog and Elaine Griffin also have a new son, Charles Murray, born May 9. And, in an unrelated item, we note that Paul Stern, Alex Pausley and Bill Patten all received their master's in business administration degrees from Harvard in June.

Dean Jacoby has asked that we include in this issue a statement from him acknowledging his appreciation of "the unstinting effort given by the retiring class officers during the last five years. I would like to thank individually Vice-president Roy

Riedinger, Secretary-Treasurer Ed Eigel, Assistant Secretary Dave Wones, Reunion Chairman Bob Anslow, Nominations Chairman Al Ward, and the members of the reunion committee, Wally Boquist, Bruce Brosler, Charley Burnham, Larry Holmes, Ron McKay, George Perry, Bob Reichard, Tony Turano, and Klaus Zwilsky." And we, in turn, thank you, Dean, for a fine job as our leader. In particular, I would like to mention and gratefully acknowledge the fact that Dean supplied a vast amount of the news for these columns, including the information above on the reunion.

If we may close on a personal note, we mention that your secretary has finally been caught by Uncle Sam, after five years of successful evasion. As you read this, I am busy defending the peace at Fort Devens, Mass. This is only a temporary assignment, and until my bride of six months, Marcia, and I acquire some sort of permanent address, the old standby given below will serve best. And, if you should want to contact our new president, Bob Anslow's address is 935 Massachusetts Avenue, Lexington 73, Mass. In any event, let one of us know what you've been up to. — EDWIN G. EIGEL, JR., *Secretary,* 3654 Flora Place, St. Louis 10, Mo.

'54 - G

I hope you had a pleasant, relaxing summer. Here in Ohio we had a late, very hot summer. Since early July, I have been supervising the installation of an electroplating and finishing department in the new Western Electric Company plant which my company, Turner Construction Company, is building in Columbus.

Earlier this summer I heard from George McCasland, XV. Since we left the Institute in 1954, he has spent three and a half years as an engineer at Esso's Baton Rouge refinery, and one year with Boonton Radio Corporation, as a sales engineer. He recently joined RCA as an electronic circuit development engineer in their Airborne Receiver Development Group. He and his wife, Marjorie, live in Camden, N.J., with their two children, Jimmie, three and a half years, and Mary Ellen, fourteen months.

Marshall Fixman, V, and Marian R. Beatman, of West Hartford, Conn., were married on July 5. They will make their home in Pittsburgh, Pa.

I have no information on hand for future columns, so please let me hear from you so that our class will have a regular column in the Tech Review. — NEWTON SHANBROM, *Secretary,* 824 Gilmore Drive, Reynoldsburg 26, Ohio.

'55

What a pleasure the first issue is; I'm inundated with letters and clippings! First of all, one wedding to report is that of Charles Robertson to Beverly Anne Cowman of Greensboro, N.C., last May. Charles graduated from West Point in 1956 and is presently stationed at Pope Air Force Base. Beverly is a 1954 graduate of Women's College of the University of North Carolina and has been doing graduate work and working at the Carolina Steel Corporation since. The Robertsons are now living in Fayetteville, N.C. I hear that Buck Brown was married in June in Oklahoma, but have no details.

A number of our classmates picked up another degree in June, doubtless more than we've heard about. From Harvard, Bob Kolenkow received the degree of doctor of philosophy; Harold Williams, the doctor of medicine; Leonard Salvador, a master's in city planning; and John Brown, a master's in business administration. Fred Lupton graduated from the Columbia Theological Seminary in Dacatur, Ga.

Don Brennan and his wife and parents were part of the 1955 delegation at Alumni Day this year. Also in this group was John Farmer, who is in business with his father in the Boston area. The Farmer Electrical Company makes photo-electric materials and devices. Others included Frank Cuff, the Pierre Lauriaults, the Emanuel Schnalls, the Harry Schreibers, Chan Stevens, and Denny. I understand that it was a very good Alumni Day, quite festive with President Stratton's inauguration, but just wait 'til next year!

A couple of our folks have new positions: Bob McMath has moved from Pratt and Whitney in Hartford to Technical Operations, Inc., in Burlington, where he is involved in work in an applied mechanics group studying fluid acoustical filters for reducing the noise level in nuclear submarines, among other interesting things; Bob Greene is now vice-president in charge of sales for Ovenaire, Inc., in Charlottesville, Va., a firm which makes crystal ovens used in mobile radio units.

The Institute of Radio Engineers show in New York City last March brought together a large group of classmates. Chan and Denny were there, as were Joe Saliba, Fred Brooks, Blev Dunklin (Union Carbide in New York City), Dick DiBona (Microwave in Burlington) and Don Welsh (Sylvania). Denny flew down from Boston, I believe, in his newly acquired Cessna.

Glenn Jackson, too, has taken to the air to cover Dewey and Almy's sales in Georgia, Florida, and South Carolina. A letter from Glenn arrived just a bit too late for the July issue with heaps of news, slanted somewhat towards the Sigma Nu side. He tells us that Pete and Jane Toohy have moved from Rye, N.Y., to Summit, N.J., since Pete was transferred from the New York City office of Shell to their Linden plant. Bob and Cookie Zoller and family are in Beverly, N.J. Bob flys the Atlantic for the U.S. Air Force and Military Air Transport Service and really gets around, I understand. Roger MacKay has left Koppers in Maine to return to the Boston area, where he is doing construction work. Lee and Marlene Zuker and family were with the Air Force in Montgomery, Ala., but were expecting to leave there in July. They've bought a house in Willow Grove, and Roy is working with Sperry-Rand. Russ and Mary Grace Meyerand are now in Hartford, where Russ went to work for United Aircraft after getting his Sc.D. last February in Nuclear Engineering at M.I.T.

Another great wave of news came from Ron Lieber, who is back home in St. Louis, working for the Independent Engineering Company, manufacturers of liquid oxygen and nitrogen plants, as a sales engineer. He reports that John Stem remained in government service at Dayton, Ohio, after his release from the Air Force. The Theta Delts have a sizeable representation in the San Francisco area with Tom and Beverly Marlow (the former in the Navy), Bill Deibel (with Peterbuilt Trucks), Rey and Carol Potter (Todd Shipyards), and Dan and Corky and two small Myerses (Allied Chemical). Still loving every minute of Berkeley are Dave and Mar Nasatir (plus children and Weimaraners). Dave is working up to his orals and was hoping to see lots of folks in September, when a trip to Chicago (home and the American Sociological meetings to boot) was planned. Dave and Toby and Jakie and Naomi Brooks are planning to make an excursion to Boston Christmas and are eager to see people in the area. They love life in Boulder, where Dave continues studies for his doctorate in geology at the University of Colorado. Dave, you have accused me falsely; I am teaching math and physics again this year at the Friends School in Wilmington, and Jack is with the Atlas Powder Company.

Dell did such a fine job that your male correspondent hates to add his two cents, however a couple of things came my way that just can't wait for next month's issue. I had the opportunity of attending a two-week special summer course at M.I.T. entitled "Reliable Long-Range Communications." In charge of the course was Professor Baghdady and our classmate Don Brennan. It's wonderful to see and hear of successful 55'ers, and it was a distinct pleasure to listen to Don lecture among the world's experts on communications theory. Don would like to make it known to his friends that he finally finished his Ph.D. (in math) last May, and has decided to remain around the Boston area for some time. He has accepted an appointment as a research associate in the M.I.T. Department of Mathematics and is the assistant leader of the Communication Systems Group at the M.I.T. Lincoln Laboratory. Don and his wife Harriet recently completed a new house in Carlisle, and would thoroughly appreciate hearing from any of their '55 friends whenever they are in the area.

A fine letter full of news was received from Roy Salzman. After three interesting and exciting years in the U.S. Air Force as a B-47 co-pilot, he kept his date-of-separation and joined Remington Rand Univac in Philadelphia in the product planning division. Roy and Doris have two children, a boy and a girl, Brad and Lynn, and have bought a spacious house in Montgomery County, north of Philly. With all that room, they are just dying for company, in case any of you are in the neighborhood.

Roy reports the following information: Jacques Linder is also out of the Air Force after a tour of duty in England. They had their second little girl in May and are now back in Baton Rouge, La., where Jack is with Esso Standard Oil. Sea McGown is in Washington, D. C., as a small-boat designer for the Bureau of Ships, and has bought his own home. He and Fran have two children, Billy and Amelia. Ed and Janet Ehrlich are in Aberdeen, Md., where Ed has an excellent position as an industrial engineer at the proving ground. They had their first child, Susan, in April. Roy saw quite a bit of Kay and Larry Schell while in flight school. They were sent to Lake Charles, La., where Larry was on a B-47 crew. They have two children, Layne and Kimberly.

I also received a nice letter from Emanuel Schnall, who is now at the Laboratory for Electronics in Boston working on digital computation systems. He and his wife arrived back in Boston from Ft. Lee, N.J., in May.

Well, there it is. If other secretaries were equally fortunate, it should be a fat Review. — MRS. J. H. VENARDE, *Secretary,* 107 Mullin Road, Wilmington 3, Del.; L. DENNIS SHAPIRO, *Assistant Secretary,* 15 Linnaean Street, Cambridge 38, Mass., ELiot 4-4901.

'56

Well, another summer has passed, and yours truly for one, must return to the classroom shortly. The four-month summer layoff has given me a chance to catch up

a little bit on back correspondence, and to accumulate a bit more information than I usually have. Jack Saloma, who has been wandering around Europe all summer, has done a first-class job as a Boston correspondent. Right now, Bruce Bredehoft is trying to find others in key areas who will serve as regional class secretaries. In the Akron area, Joe Huber has offered to serve as our agent.

June is traditionally the month for graduations. In addition to those graduating from Harvard whom we mentioned in the July issue several more of our classmates have earned new degrees. After working at the New York University graduate center at the Bell Telephone Labs in Murray Hill, N.J., Meyer Barash has received a master's degree in electrical engineering. Dick Srebro received an M.D. degree from Washington University in St. Louis, while Ted Yanow picked up a B.A. in comparative literature from Boston University. Among those still working on degrees are Vic Bauer, Tom Jones, and Roger Foltz, all in the chemistry department at the University of Wisconsin. Vic reports that he and his wife, the former Sonia Witowski, are now the parents of a girl, Kathy, born in August, of 1958.

June is also traditionally the month for weddings, and this June has not passed our Class by. On the 7th, Roger Borovoy married Brenda Gordon of Newton, Mass. On the 20th, Bob Biehl wed Winifred Kane of Stamford, Conn. In the fall, Bob will return to his studies at Harvard Medical School. In addition, Al Spahr married Joan Bruce of Springfield, Vt. Al is now a West Coast sales representative for the computer division of the Bryant Chucking Grinder Company of Springfield, Vt., and he and Joan are living in Los Angeles. John Coleman, now with Boeing in Seattle, married Winifred Sibley of Malden. Among those at the wedding were Bob Brown, Karl Pearsons, and Jesse Rothstein. Winifred is the former class notes editor of The Technology Review, and we'll miss her guiding hand in the coming months.

Also in June, Bob Brown married Elizabeth Ann Gelhaus of Little Silver, N.J., and Peter Burnham wed Ellen Cluett of Milton, Mass. Carrying over into July, John Hartigan wed Virginia Newton of West Roxbury, Mass., on the 11th.

The junior members of the Class are also on the increase. Dick Benjamin and his wife Nancy report the production of a new model, their second design, Charles David, born on July 29.

At M.I.T., Ronald Massa and Jack Rosenfeld were among the five instructors in the Electrical Engineering Department to receive awards for excellence in teaching. Gordon Bell, back from a Fulbright in Australia, is now a Division of Sponsored Research member in the speech communications lab at Tech. Gordon was married to Gwendolyn Dru'yor in January of this year.

Old time East Campus residents will learn with sorrow that the Lever Brothers plant nearby is being closed down. No longer will the wonderful aroma of soap mixed with that of candy, salt water, and rubber, waft gently across the campus. Although the remaining odor will hardly produce a good perfume, perhaps the loss of one of the ingredients will alter the sick look on some of the East Campus faces.

Class members will be saddened to learn of the death of Robert B. Sullivan in a July automobile crash. Bob was working with the National Research Company in Cambridge at the time of his death. A Course X man, he was a member of the swimming and rugby teams while at Tech. On behalf of the Class, we would like to express our deepest sympathy to Bob's family.

In connection with the Alumni Day program in June, Dr. Julius A. Stratton was inaugurated 11th President of the Massachusetts Institute of Technology. Even a Boston downpour was unable to dampen the festive nature of the occasion. From my own brief acquaintance with Dr. Stratton, I am sure that he will be an eminently capable successor to Dr. Killian. So, the best of luck to him.

Despite the attraction of a presidential inauguration, representation from the Class of 1956 at Alumni Day was sparse. Only three members appeared: Mr. and Mrs. Charles Hazard, Mr. and Mrs. Robert Malster, and Mr. and Mrs. Arthur Wickesser. — LT. BRUCE B. BREDEHOFT, AO 3067617, *Secretary*, Box 108, 626th AC & WRON, APO 701, Seattle, Wash. M. PHILIP BRYDEN, *Assistant Secretary*, 3684 McTavish Street, Montreal 2, Quebec, Canada.

'56-G

Alan Cohen, a graduate with a master's degree program in soils engineering has settled in Mt. Vernon, N.Y. Alan spent two years in the U.S. Air Force, an experience which sent him to Japan. Dr. Leonard S. Rodberg, who received a doctorate in physics at Tech, has joined the physics department of the University of Maryland. Jim Hatcher is with the firm of Wittenberg, Debony and Davidson, in Little Rock, Ark. Mr. and Mrs. Sydney Davidoff of Dorchester have announced the marriage of their daughter, Edith Libby to Joseph Muskat. Joseph will remain at M.I.T. to continue teaching and studying for his doctorate in mathematics. The marriage of Dr. Leonard Weissbein to Miss Irma Siegel took place this past summer in New York. His bride is a graduate of Vassar College. Leonard directed many graduate student activities in the course of his student days in textile engineering. Dr. Weissbein is vice-president of the 1956-G Class. Julian Beinart, an M.I.T. architecture graduate, has gone to the University of Witwatersrand in Johannesburg, South Africa. Dr. Ted Liss is situated professionally in Wilmington, Del. A young Frenchman from Orleans, Andre J. Kermabon, has sent word of his voyage south to take up a position in El Biar, Algeria. Andre received his master's degree in geophysics. Dr. Bill Whitney, who gained his academic degree in physics, has stayed at Tech. The 1956-G class president, Thomas Mix has taken up the duties of assistant professor of Chemical Engineering at the Institute. Fred Brauer, a native of Toronto, Canada, is now a member of the faculty of the University of British Columbia in the department of mathematics. — LT. (jg) CHARLES T. FREEDMAN, USN, *Secretary*, Special Weapons Division, USS Independence, FPO, New York, N.Y.

'59

The summer is over and for the most part the members of the Class of '59 are returning to schools all over the nation. I've now heard from about half of our Class and 60 percent of us are pursuing advanced degrees. In addition to the list published in the July Technology Review, the following students will be back at M.I.T. this fall: Al Angelbeck, Bob Baker, Bill Beres, Eugene Burk, Gilbert Chin, Jim Conklin, Carol Diffey (Carol is married now, I believe), A. Dulyanai, R. G. Edwards, Burton Eno, Ed Friedland, Dave Garelick, M. F. Garnier, Rich Gurski, Charles Hill, Jim Hurley, Seiji Itahara, Bill Jobin, A. J. Kalnajs, Al Kniazzeh, A. Kompany, Louis Krasny, Ken Kreider, Larry Laben, Bob McAuliffe, M. L. Minges, Bob Noble, Henry Oberson, Joel Parks, Bob Raymond, Phil Schuler, G. H. Sewell, Ron Shank, Bruce Silberg, Gary Silver, C. H. Stapper, Fred Wan, W. L. White, Wayne Worrell, and, bringing up the rear Glenn Zeiders.

Many other universities are also seeing additional students from Tech. Ron Wempen will be at Boston University. E. S. Talley is attending Brooklyn Polytech. Brown University will see Dave Avison, Dave and Herb Kline, and Bill Magee. Bob Rosenfeld is going to California Institute of Technology. Don Jones will attend U.C.L.A. part time. At Case Institute we have Bill Bassichis. Bob Glosser and Ron Schulman will be at the University of Chicago. At City College of New York we have Joel Lazar. K. P. Rhea will attend the Colorado School of mines.

Joining me at Columbia will be Len Charlap, Lee Cooper (Lee was married this summer), John Erglis, Judson James, Art Laufer, and Tom Paprocki. Helping our comrades to "fight fiercely" will be Rich Huguenin, Frank Koppelman, Ken Krohn, John McNear, Pete Moss, F. Navarro, Chuck Staples, Ellery Stone, and Wayne Stuart, all at Harvard. Rich Becker and George Fisher will be seeing the University of Illinois.

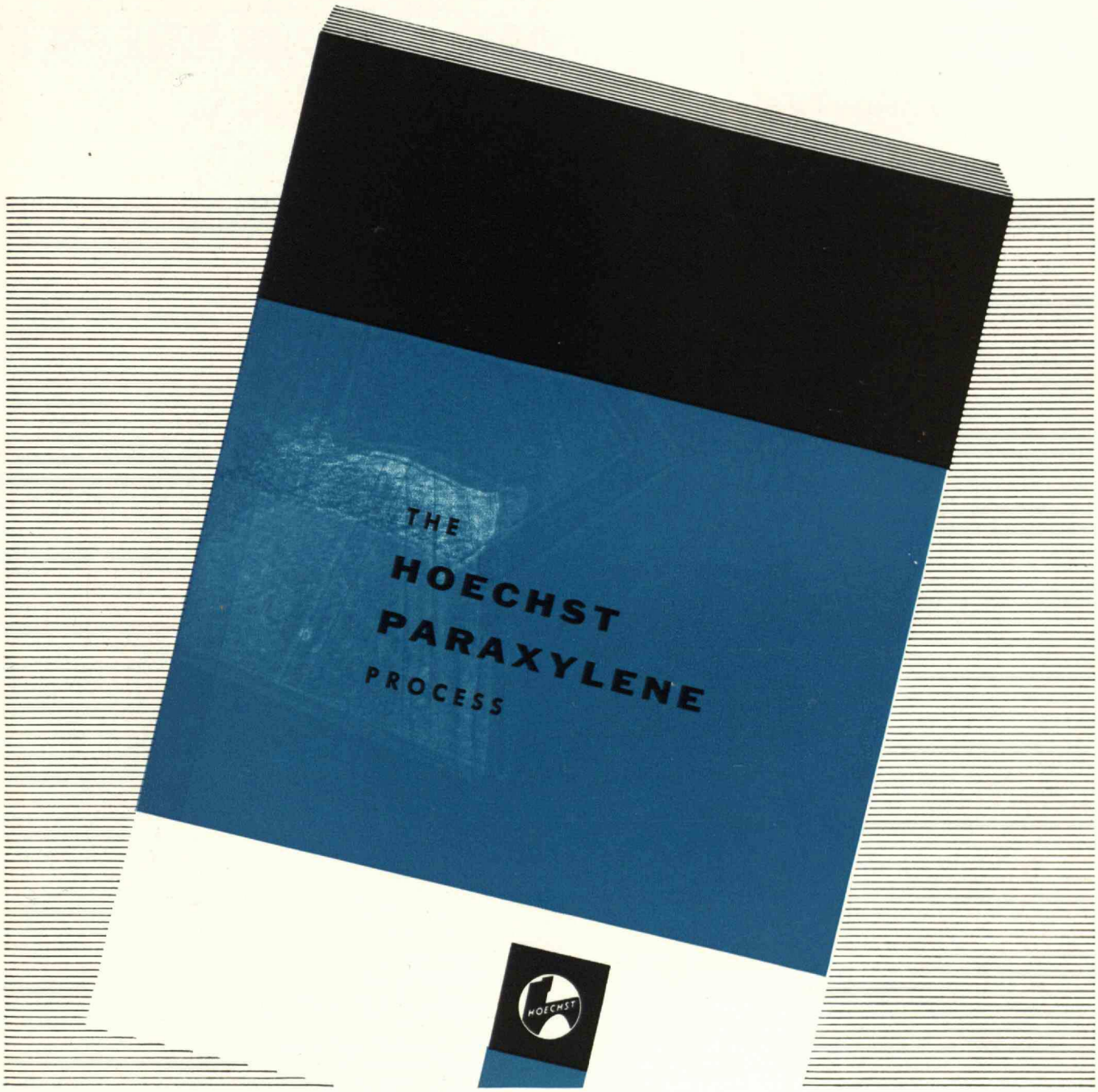
At Indiana we have Jim Robertson; at Iowa State, Rich Barnes; at Maryland, John Marko; at Miami, George Clark (George and Ann White were also married this summer); at Michigan, Oliver Seikel; at Minnesota, A. F. Spilhaus; at New York University, Jon Weisbuch; and at North Carolina, John Kusmiss.

There are many more grad schools represented as well as many companies receiving the services of our class members. I'll run through the rest of these in the next two or three issues.

I stopped by Tech in September for a day or two and noticed several changes. The new athletic center has been completed and, lo and behold, Westgate is entirely gone. Looks like the Institute is planning some large scale expansion in the near future.

By now, most of you should know your mailing address for the next year, at least. Please drop me a line. — ROBERT A. MUH, *Secretary*, 8 Merrivale Road, Great Neck, N.Y.

NEXT MONTH: The Review will publish photographs of the Alumni Officers' Conference held in Chicago



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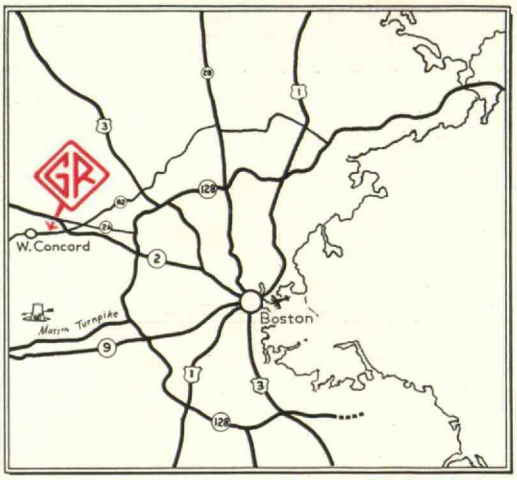
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